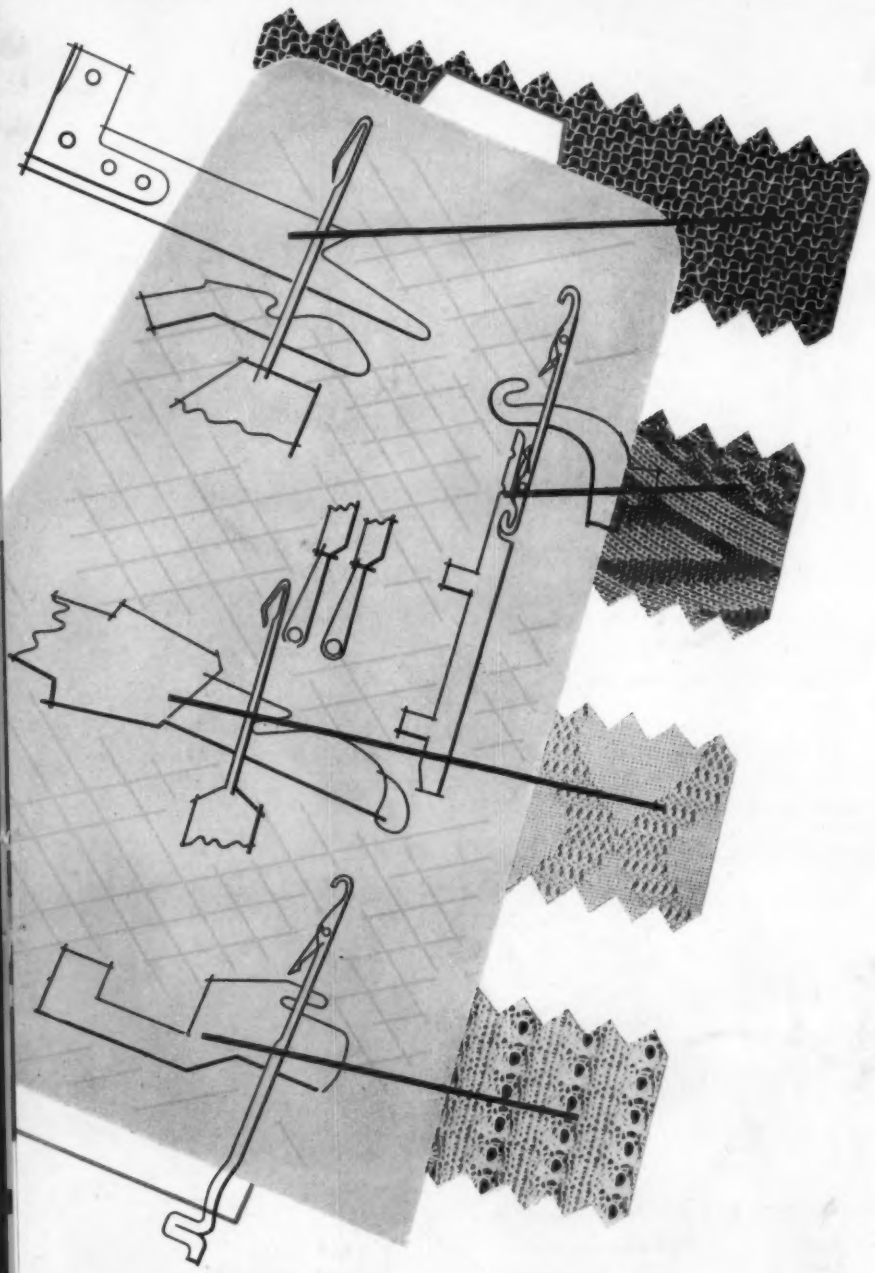
50 CENTS

# Textile World

APRIL, 1955



IN THIS ISSUE:


Do We Take the Whip? ..... 89
Tariffs—a 3-Way Battle ..... 93
"Open the Door for Japan" ... 94
"Increase Exports or . . .?" ... 95
"We Are Not Expendable" ... 98
**Textile World's** Analysis ... 99
What Makes You Tick? ..... 101
New Drawing Rolls ..... 103
Nylon Tire Cord ..... 104
Piece-Goods Dyeing ..... 106
Solve Maintenance Problems .... 108
Plant-Maintenance Show ..... 109
Weaving Efficiency ..... 112
Coats & Clark's Mercerizer ..... 114
Cotton Research Clinic ..... 116
Waste Reduction ..... 116
Report on Pima S-1 ..... 117
Carding Modifications ..... 118
Fiber-Length Distribution ... 118
Joanna's Quality Tests ..... 120
Modern Knitting Production . 121
Full-Fashioned Hosiery ..... 122
Underwear ..... 124
Men's Circular Hosiery ..... 126
Warp Knitting ..... 128
Women's Seamless Hosiery ... 130
Outerwear ..... 132
Knitting Show Guide ..... 134
Precarding Wool Blends ..... 147
Waverly Mills Weaving ..... 149
Reducing Spinning Ends Down .. 153
Synthetics for Worsted Men .... 250
Reduce Pilling of Dacron ..... 256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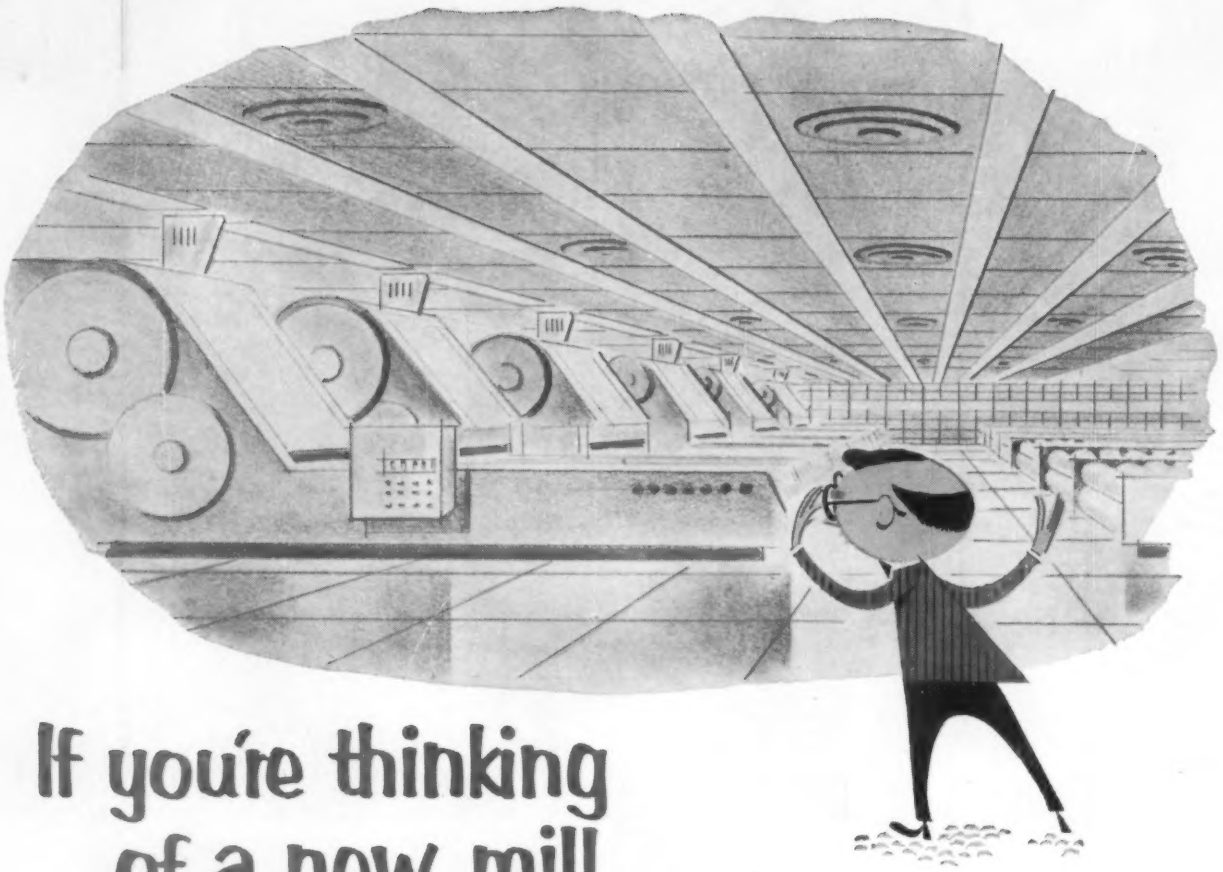

# If you're thinking of a new mill

Advanced textile mill designs such as this are not just dreams.

Many practical textile innovations on our drawing boards today will soon be in operation for far-sighted textile firms in many fields. These streamlined designs and plans for machinery and mills all have one goal in common—lower production costs!

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# here's a good starting point

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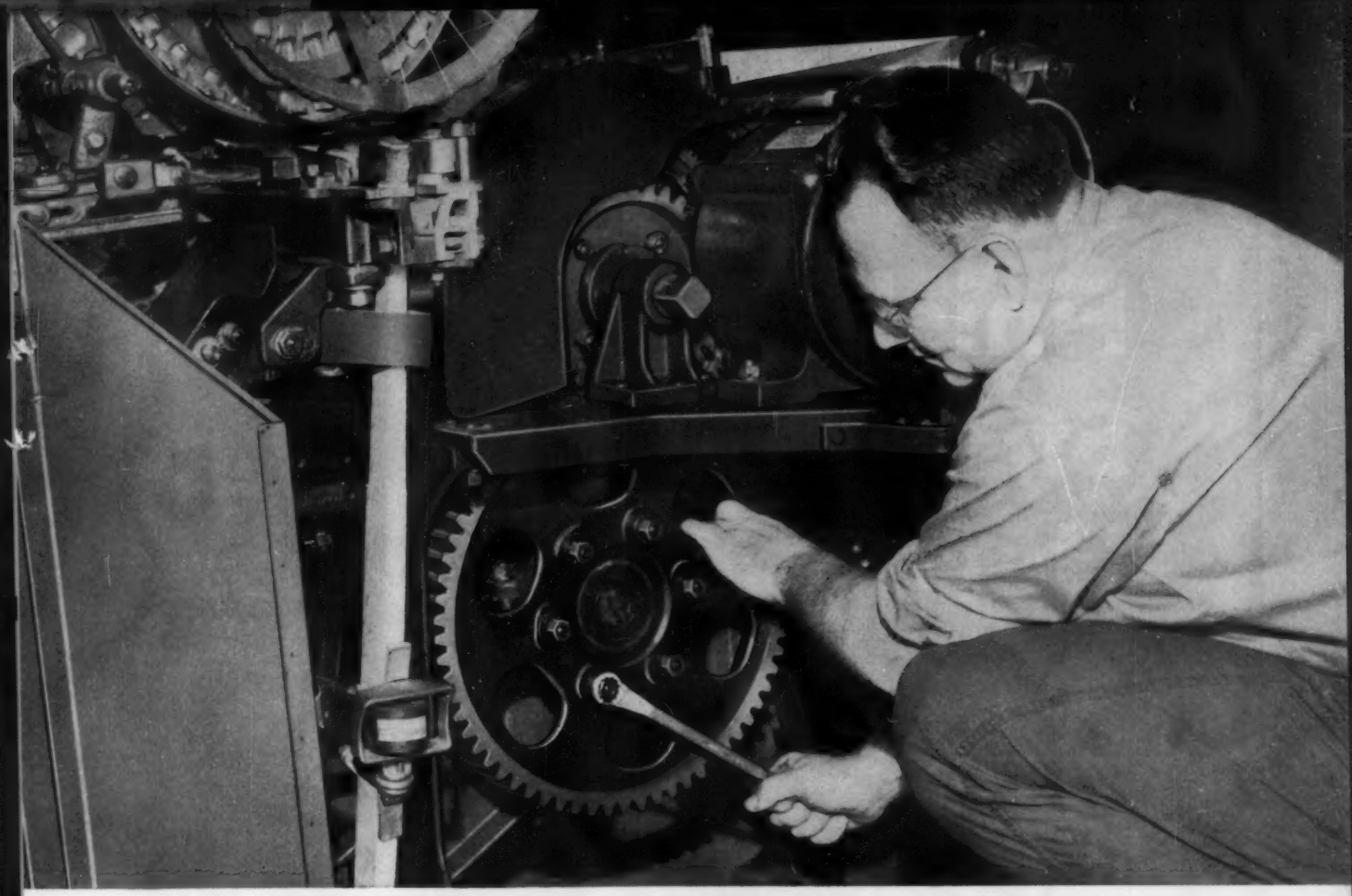
Swift Spinning Mills
The Springs Cotton Mills
Thomaston Mills
United Merchants & Manufacturers Co., Inc.
West Point Manufacturing Company



# HERE IS A LABOR SAVING PRODUCT

. . . this is evident when you compare these photos. The new Cam Shaft Gear and Hub assembly illustrated is just one of many new Draper constructions, designed to *lower costs* and *increase profits*.

It is this continued effort to "make it better", that has made Draper products the accepted standard in leading mills through-out the world.

Save time and money by using the *right repairs* on Draper looms . . . Draper repairs.

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# Table of Contents


APRIL • 1955
Volume 105 Number 4


KEYED ACCORDING TO READER INTEREST

## DEPARTMENTS


| | |
|---|---|
| Book Reviews | 198 |
| Calendar | 258 |
| Editorial | 89 |
| Equipment and Supply News | 159 |
| Kinks and Short-Cuts | 177 |
| Mill Maintenance | 228 |
| New Dyes and Chemicals | 170 |
| News About Men | 270 |
| News About Mills | 264 |
| News About Suppliers | 260 |
| News of the Month | 4 |
| Obituary | 274 |
| Pointers for Supervisors | 157 |
| Questions and Answers | 173 |
| Reader Service | 187 |
| Round Table | 8 |
| Textile Tickles | 173 |
| Trade Literature | 188 |

Advertisers' Index ..... 283


## Feature Articles


| SPINNER | WEAVER | KNITTER | FINISHER | ENGINEER | | | COTTON | SYNTHETICS | WOOL |
|---|---|---|---|---|---|---|---|---|---|
| Y | W | K | F | E | Do We Take the Whip? (Editorial) | 89 | C | S | W |
| Y | W | K | F | E | TEXTILE TARIFFS—A Three-Way Battle | 93 | C | S | W |
| Y | W | K | F | E | Washington: "Open the Door for Japan" | 94 | C | S | W |
| Y | W | K | F | E | Japan: "Increase Exports or . . .?" | 95 | C | S | W |
| Y | W | K | F | E | U. S. Mills: "We Are Not Expendable" | 98 | C | S | W |
| Y | W | K | F | E | A TW Editorial—What's the Answer? | 99 | C | S | W |
| Y | W | K | F | E | What Makes You Tick? | 101 | C | S | W |
| Y | | | | | New DRAWING ROLLS Jumped Production 33% | 103 | C | | |
| | | | F | | Bigger Market for NYLON TIRE CORD? | 104 | | S | |
| | | | F | | Piece Goods Dyed by WARP-DYEING Methods | 106 | C | S | |
| | | | | E | Solving MAINTENANCE PROBLEMS | 108 | C | S | W |
| | | | | E | Tips from the PLANT-MAINTENANCE SHOW | 109 | C | S | W |
| | W | | | | MILL EFFICIENCY on Print Cloth, Corduroy | 112 | C | | |
| | | | F | E | Coats & Clark's New YARN MERCERIZER | 114 | C | | |
| Y | | | | E | COTTON RESEARCH CLINIC | 116 | C | | |
| Y | | | | | WASTE Reduction | 116 | C | | |
| Y | | | | | Report on PIMA S-1 | 117 | C | | |
| Y | | | | | CARDING Modifications | 118 | C | | |
| Y | | | | | FIBER-LENGTH Distribution | 118 | C | | |
| Y | | | | E | Variety of QUALITY TESTS Made at Joanna | 120 | C | | |
| | | K | F | | MODERN KNITTING PRODUCTION | 121 | C | S | W |
| | | K | | | Written Standards for F.-F. HOSIERY | 122 | | S | |
| | | K | | | REBUILT MACHINES Give 90% Efficiency | 124 | C | S | W |
| | | K | | | FIXER-INCENTIVE System Cuts Bad Work | 126 | C | S | W |
| | | K | | | Tricot Mill Tackles WARPING Problems | 128 | C | S | W |
| | | K | | | Quality Control for 474-NEEDLE HOSIERY | 130 | | S | |
| | | K | F | | Better OUTERWEAR Knitting | 132 | C | | |
| Y | W | K | F | E | KNITTING SHOW GUIDE | 134 | C | S | W |
| Y | | | | | Precarding WOOL-BLEND Components | 147 | C | S | W |
| | W | | | | Waverly Mills Converts to Rayon WEAVING | 149 | C | S | W |
| Y | | | | | How To Reduce SPINNING ENDS DOWN | 153 | C | S | |
| Y | | | | | Synthetics for WORSTED-SYSTEM Processing | 250 | | S | W |
| Y | | | F | | How To Reduce PILLING of Dacron Fabrics | 256 | | S | |


## Equipment and Supply News


| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | W | | | | Positrol Air Drying SLASHER | 161 | C | | |
| | | K | F | | HOSIERY-DYEING and -FINISHING Machine | 162 | | S | |
| | W | | | | STATIC ELIMINATOR for Looms | 162 | C | S | W |
| Y | | | | | TRUMPET GUIDES | 162 | C | S | W |
| Y | | K | | | CONE WINDER for Spun Yarns | 164 | C | S | W |
| Y | | | | | Improved SANDWICH BLENDER | 164 | C | S | W |
| | | K | | | Hosiery-Machine TENSION DEVICE | 164 | C | S | W |
| Y | | K | | | CONE WINDER for Filament Yarns | 166 | | S | |
| Y | | | | | NYLON-BINDING Attachment | 166 | | S | |
| | | | F | E | High-Capacity CHLORINATOR | 166 | C | S | W |
| Y | | | | | Balmes DRAFT SYSTEM | 168 | C | S | |


## Kinks and Short-Cuts


| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Y | | | | E | Reduce LAP ENDS and Fire Hazards | 177 | C | S | |
| | | K | | | Prevent KNITTING-MACHINE Damage | 177 | C | S | W |
| | | | | E | BROKEN TAPS Removed With Tallow, Glue | 177 | C | S | W |
| Y | W | K | F | E | Make OVERHEAD WORK Safer | 178 | C | S | W |
| | | | | E | DRILL GAUGE Can Be Made From Two Nuts | 180 | C | S | W |
| | | | F | | Filter Solutions for More-Even DYEING | 182 | C | S | W |
| | | K | | | Save Time on Fancy TRICOT Samples | 183 | | S | |
| | W | | | | Beeswax Stops WARP BREAK-OUTS | 183 | C | S | W |
| Y | | | | | Reduce BACKWINDING Costs | 183 | C | S | |
| | W | | | | Put DRAW TAPE in Bagging on the Loom | 184 | C | | |
| | | | | E | Shop-Made LAMP Relaces Extension Cord | 185 | C | S | W |
| | W | | | | How To Gauge HARNESS SPRINGS | 185 | C | S | W |

# NEWS of the MONTH

## Wabash Valley Potentials

The Lower Wabash River Valley in southwestern Indiana and southeastern Illinois is recommended as an excellent area for the "successful establishment" of textile industries in a new study of the area's industrial potentialities made by Chicago & Eastern Illinois Railroad.

The 460-page report points out that, on an integrated basis, the wool business would have a sound foundation for operation in the area. Wages in the area are lower than in wool textiles, and wage costs cover 57% of value added by woolen processing. The area can receive imported raw wool economically by barge, and it is closer than Eastern mills to principal domestic wool sources.

## Fiber News

▶The price of heavy-denier rayon was increased by Du Pont last month. Regular 1,800-den. yarn went up 2¢; and all 300-, 400-, 600-, and 900-den., bright and dull, yarn went up 5¢.

▶A 50-50 blend of polyester and wool fibers may be adopted by the Marine Corps as a government-issue summer uniform. Such uniforms can now be bought by Marines; but the government-issue uniform is a blend of 57% rayon, 28% mohair, 10% acetate, and 5% nylon.

▶American Enka Corp. is producing a super-strength rayon yarn for tires. The yarn is being sold in commercial quantities and marketed under the tradename Suprenka.

▶In Australia a new branding fluid has been approved by a committee including manufacturers to combat damage caused by unscourable brands. The fluid will be prepared in reds, blues, and greens, so that all black markings on wool will be suspect.

▶Celanese will be in full-scale production on Fiber X-36, a superstrong industrial yarn in the Fortisan family, before the year is out. Sample quantities from pilot-plant operations will be available until the Rome, Ga., plant is started. First production will be in 800-den. continuous filament. The fiber is intended to fill the gap between high-tenacity rayon and glass fiber. Applications are expected to be belting, hose, webbing, backing for heavy-duty carpets, etc.

## Marketing Matters

▶It is important for the textile industry to recognize who its competitors are, suggested Milton Harris, at the annual alumni banquet of Philadelphia Textile Institute: "We must learn among other things that our major competition is not wool versus some synthetic fiber; it is textiles battling for the consumer dollar against the automobile, television set, or electrical appliance."

**MAID OF COTTON, DeLois Faulkner, takes an objective interest in a new cotton bandage developed at Southern Regional Research Laboratories of the U.S.D.A. The inventor, C. F. Goldthwait of the laboratory staff demonstrates the bandage's properties: moderate elasticity and a nonslip surface, which make it conform to body contours. Joints can be tightly bandaged without interfering with normal body movements.**

▶Tricot-fabric producers should establish firmer standards of quality and construction and let buyers and consumers know that these standards exist. Otherwise nylon tricot may follow the course of acetate tricot, according to Mitchell Schneider of Schneider Mfg. Co., in a talk to the Warp Knit Manufacturers Group of the National Federation of Textiles. Buyers do not know enough about the relative weights and yields of various nylon tricot fabrics.

▶In a survey of Oregon mothers on ready-made clothes for grade-school girls, shrinkage information topped the "What do you like on the label" answers. Information on washing and care and colorfastness was also requested. The survey was conducted by Oregon State College's home-economics department.

▶A booklet called *The Development of the Home Sewing Market and a Look at Its Future* is available free from Simplicity Pattern Co., 200 Madison Ave., New York 16, N. Y. Thirty-eight-million women spent $468-million for piece goods in 1953.

▶A task group has been set up by The Textile Distributors Institute to explore optimum end-use requirements for fabrics in four major categories: blouse and underwear, men's wear, shirting, and women's wear. The object is to set up a fabric-certification program and create a symbol of quality to be used in consumer promotion.

▶Specific-content labeling will prove meaningless in most cases, according to L. A. Fluck of American Cyanamid Co., because quality is not established in consumer terms. "Of what value to [the consumer] is it to know that one fabric is a blend of 40% acetate, 40% cotton, and 20% nylon? The consumer wants to know how it will wear, whether it will resist wrinkling, whether it can be washed, and so on."

CONTINUED ON PAGE 6

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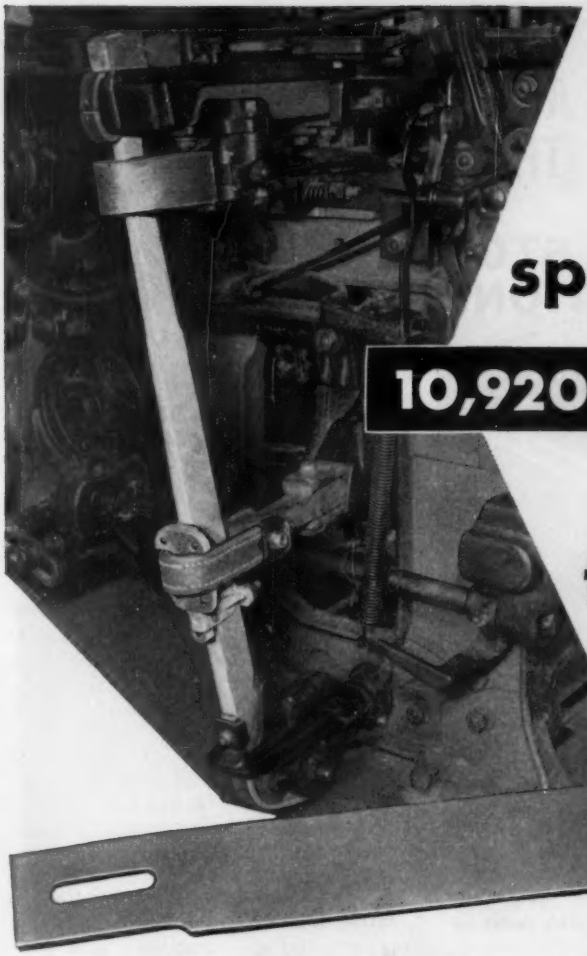
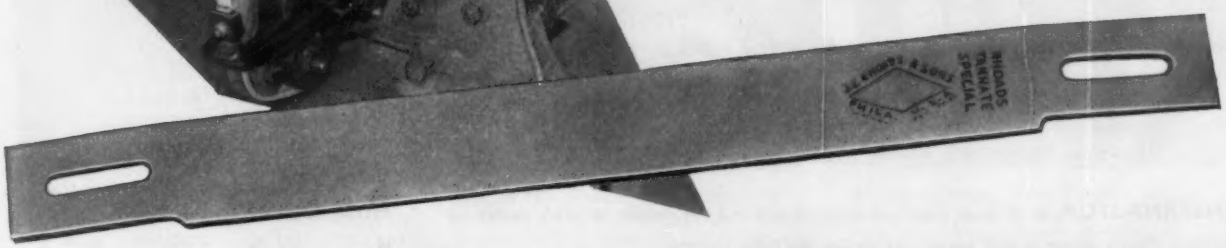


# Tannate® special checks took

## 10,920 HAMMER-LIKE BLOWS per hour for 5000 or more hours




## ...gave nearly double the life of other check straps used

One of our customers operates 400 Draper Model X2 40" looms, 182 p.p.m., and has been using heavy weight Tannate Special Bi-Cut Check Straps 2" x 23". They operate 120 hours per week and reports say Tannate averages 5,000 to 5,500 loom hours; just about double the life received from other make check straps previously used on these looms and at this speed.

The exclusive Tannate special tannage and curry is the principal reason these straps are able to take such a beating and yet hold up so well.

In addition, Rhoads patented Bi-Cut feature permits the strap to conform to the angle of the picker stick and to drop clear of the binder bolts and nuts that frequently scar ordinary straps. More leather hugs the stick to cushion its flight and box the shuttle perfectly.

Tannate Special Checks are available in a wide variety of sizes, thicknesses and degrees of firmness, to suit your particular requirements.

So no matter what kind of straps you are using, try Tannate Special Checks and see for yourself how Tannate can very probably lower your strap costs.

### what is Tannate® Special Leather?

Tannate special leather is a Rhoads exclusive. It's custom tanned to build into it all the characteristics so necessary for efficient loom operation. For specifications, write J. E. Rhoads and Sons, 35 North Sixth Street, Philadelphia 6, Pa.

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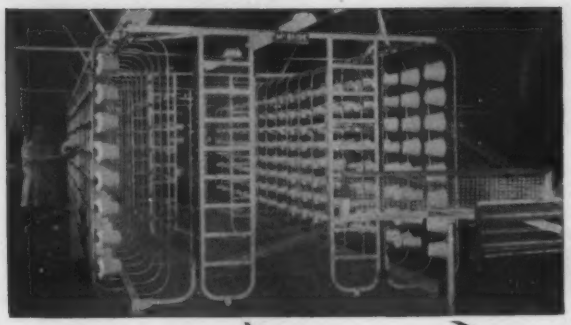
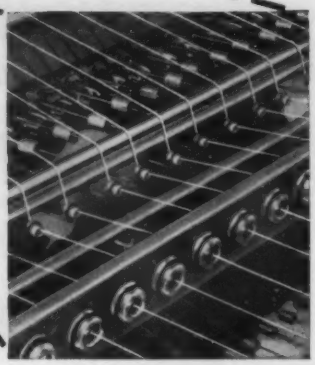


# THE LATEST THING in STOP MOTIONS



**NOW STANDARD ON McBRIDE CREELS**

**Versatile, compact, rugged, efficient.** McBride magazine creels are engineered for you—to increase your efficiency, cut your costs.

***INSTANT-STOP*** is the very latest thing in Stop Motions. A SEALED-MERCURY-SWITCH insures instant action.

***McBRIDE INSTANT-STOP*** is now available in three models to cover virtually all weights of yarn:

Sensitive—for extra-fine yarns from 12 denier nylon on up.
Standard—for intermediate weights.
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***INSTANT-STOP,*** in all three models, is equipped with a 3-way, totally enclosed, double signal light. Clearly visible to both warper and creeler, the lights instantly:

1. Indicate all ends running smoothly (lights off).
2. Locate broken end (lights on).
3. Call attention to the locking bar if not released after ends have been drawn in (lights blinking).

The McBride Stop Motion, standard for all McBride creels, means quality production, positive control, instant action, and prompt location of lost ends.

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## NEWS OF THE MONTH
CONTINUED

### News Briefs

► A bleaching solution that will eliminate yellowing of synthetic textiles has been developed by the Tokyo Institute of Technology. The chemical solution, which consists mainly of amino naptha acetylide, is expected to solve the major defect in Japanese synthetics.

► Union contracts in Northern cotton and rayon mills can be canceled by either party as of April 15; and most mills, lead by the Fall River-New Bedford area, have already canceled their contracts as of that date. A union conference voted to renew the agreements without change, but the mills are reported to desire a wage decrease.

► The minimum level of price support for 1955-crop upland will be 31.70¢ per lb. (90% of parity), gross weight, based on Middling $\frac{7}{8}$-in. cotton. Minimum support for extra-long-staple cotton will be 55.20¢ per lb. (75% of parity), net weight.

► The average support level for shorn wool in 1955 will be 62¢ a lb. (106% of parity). Mohair support: average of 70¢ per lb. (91% of parity).

### Mill Developments

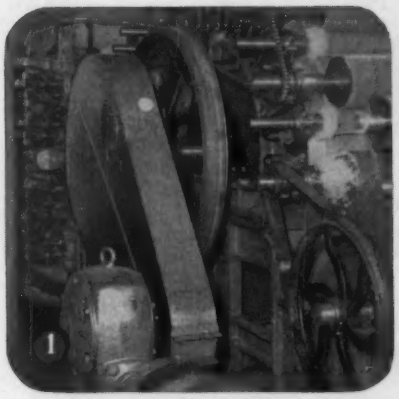
► Clearview Textile Corp., Scranton, Pa., is now in production on a new process for making stretch nylon and Dacron yarns. A trade name will be selected for the yarn, which is available to the trade on a regular commission-throwing basis.

► A felt blend of Vicara zein fiber and wool, called Wescara, has been developed by Western Felt Works, Chicago, Ill.

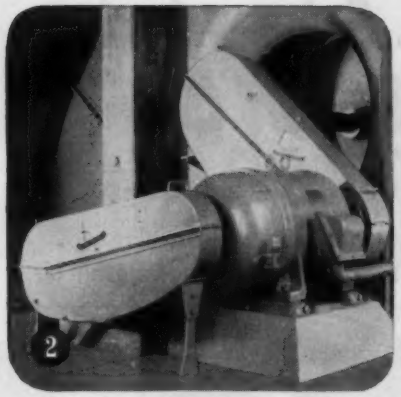
► Pacific Mills is marking sheet packages with a colored wavy border for easy identification of the type and construction and for eye appeal. Five colors, silver, gold, pink, blue, and brown, are being used.

► A process for bonding neoprene synthetic rubber and nylon fabric has been patented by Du Pont. A tarpaulin material trademarked Fairprene will be marketed. Features: The material is nonshrinkable, cannot absorb water, has high tear strength, can be stored for long periods without danger of mildew or rot, and can be patched like an inner tube.

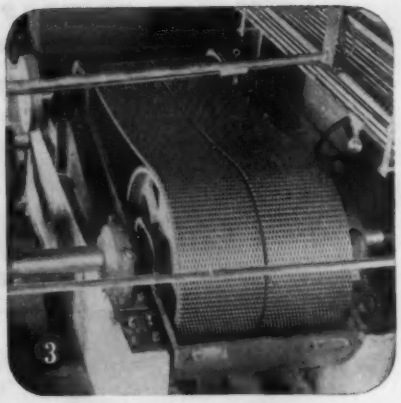
► The special sleeve Phoenix Hosiery Co. used to package stretch socks proved so successful at Christmas that



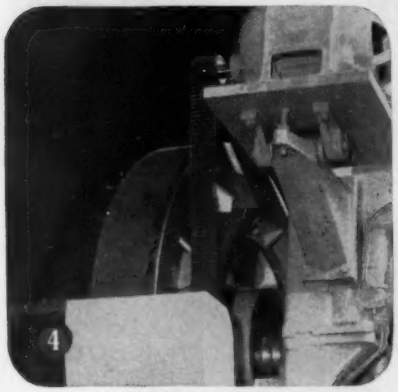
**1 ADVERSE OPERATING CONDITIONS.** Humidity, heat, cold do not lower Link-Belt Silent Chain's better-than-98% efficiency.



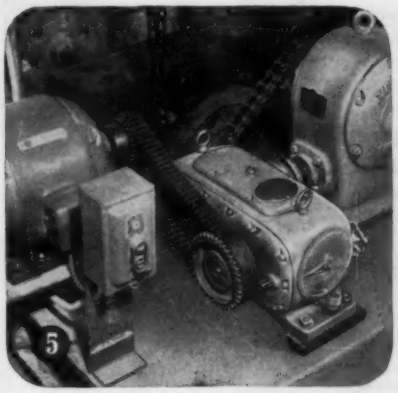
**2 UNFAILING SAFETY.** Dependability assures continued production. On above tunnel ventilators, Link-Belt drives protect human life.



**3 LARGE OR SMALL HP.** A versatile line, Link-Belt Silent Chain drives are available from fractional to thousands of horsepower.



**4 LARGE RATIOS.** Link-Belt Silent Chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



**5 LIMITED SPACE.** Easy to assemble in close quarters, Link-Belt Silent Chain permits built-in drives, compact housings.

**6 HIGH SPEED.** After 13 years on this newspaper press at speeds up to 4700 fpm, Silent Chain is still efficient.

# *Big reasons why LINK-BELT Silent Chain*

# is specified for so many drives:

WHEN using a Link-Belt Silent Chain Drive, you can look forward to better-than-98% efficiency throughout its long operating life. What's more, silent chain offers the sureness of positive tooth-to-tooth action plus the flexibility of a belt. As for economy, silent chain is often lower in cost than other drives far less efficient.

Find out for yourself why so many of today's demanding drives incorporate Link-Belt Silent Chain. Ask your nearest Link-Belt office or distributor for Book 2425, containing complete information.

**LINK-BELT**

**SILVERSTREAK SILENT CHAIN DRIVES**

**Here's why LINK-BELT Silent Chain offers you more drive per dollar**

- Lower cost—often lower in first cost, always lower in ultimate cost.
- Longer life—trouble-free performance for 20 to 30 years is common.
- No dismantling machine or removing sheaves for repairs.
- Better than 98% efficiency.
- Maintained ratio assures full productive capacity.
- Slipless action assures a better product.
- Easy to install.
- Safe to employees—operates in oil-retaining casing.

**LINK-BELT COMPANY:** Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 13,710

**NEW... Sales-winning TEXTILE PACKAGING**

**with Perfect Electric-Eye Registration . . . directly from Your Printed Package Design!**

**EASY AUTOMATIC OPERATION**

Regardless of size or shape, you get a neat, tight, perfect-register wrap on every package with a Hayssen automatic wrapping machine. Also, production men report savings up to 80% over previous wrapping costs.

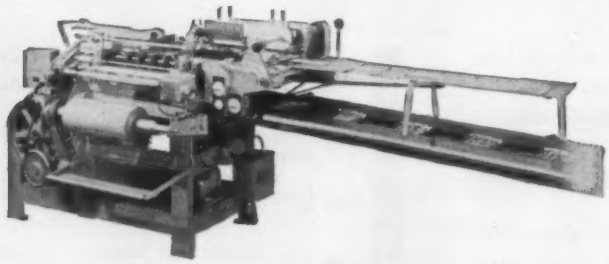
**FASTER, SIMPLE TO CHANGE SIZE**

No complicated adjustments from size-to-size on a Hayssen. No gears or sprockets to remove or change... no need for expensive mechanics to change size, either. So simple the operator does it on the job.

**COSTS LESS, DURABLY BUILT**

Hayssen's simple, rugged design, using fewer moving parts, keeps these machines working and saving through years of dependable, trouble-free service. Both the cost of the machine and the maintenance are so low you won't believe it.

**See us in Booths 555-556, Knitting Arts Exposition, Atlantic City, April 25-29**



*Let our Packaging Engineers help you with your packaging problems... WRITE US TODAY for further details.*

**Hayssen MFG. COMPANY**

Since 1910, Manufacturers exclusively of automatic wrapping and packaging machines.

**Dept. TW-4, SHEBOYGAN, WISCONSIN**

Atlanta • Boston • Chicago • Dallas • Denver • Detroit • Los Angeles • Minneapolis
New York • Philadelphia • St. Louis • San Francisco • Seattle • Montreal • Toronto


Phoenix put out a special sleeve for Valentine's Day. Three socks in separate cylinders are packed to encourage the sale of three units instead of one.

► Cannon Mills won a Silver Award in the miscellaneous division of the Variety Store Merchandiser Packaging Competition for its boxed-towel-ensemble package. The package was designed by Dorritt Osann of the Cannon organization.

► A washable nonwoven interlining made of rayon and cotton with no starch or filler has been developed by Visking Corp., North Little Rock, Ark. It is called Kevon Kloth or Viskon Super Interlining.

## Letters From Readers

**What's on your mind?**

**We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.**

**Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.**

**Write to Editor, Round Table, TEXTILE WORLD, 330 W. 42nd St., New York 36, N. Y.**

### NEW GILL REDUCER

Dear Editor:

I would like to add a note to my article "These Things Cause Worsted-Top Irregularity" [TW, Jan., '55, p. 86].

In explaining that "gill reducers with two deliveries per head always produce a heavier sliver in running only one delivery," I should have pointed out that the new-model Holdsworth gill reducer shown last year at Atlantic City and already in wide use in American mills has proved to be a big step forward in this respect. It has also achieved close to perfection in the elimination of inside-to-outside sliver-weight variation at the



For more information, write direct or use Reader-Service post card.

# Could your package use these advantages?

☆ **HIGH TENSILE STRENGTH**

☆ **SUPERIOR CLARITY**

☆ **EXCEPTIONAL RESISTANCE TO SUNLIGHT – EXCELLENT AGING QUALITIES**

☆ **OUTSTANDING TEAR-RESISTANCE – PERMITTING ALMOST LIMITLESS HANDLING WITHOUT DANGER OF BREAKAGE**

☆ **HEAT-SEALABILITY WITHIN A WIDE RANGE OF TEMPERATURES – A PLASTIC FILM THAT HEAT-SEALS ON CURRENT COMMERCIAL OVERWRAP EQUIPMENT**

IF the answer is yes to any of these, it'll pay you to investigate VITAFILM – latest packaging advance of the Goodyear Film Development Laboratories.

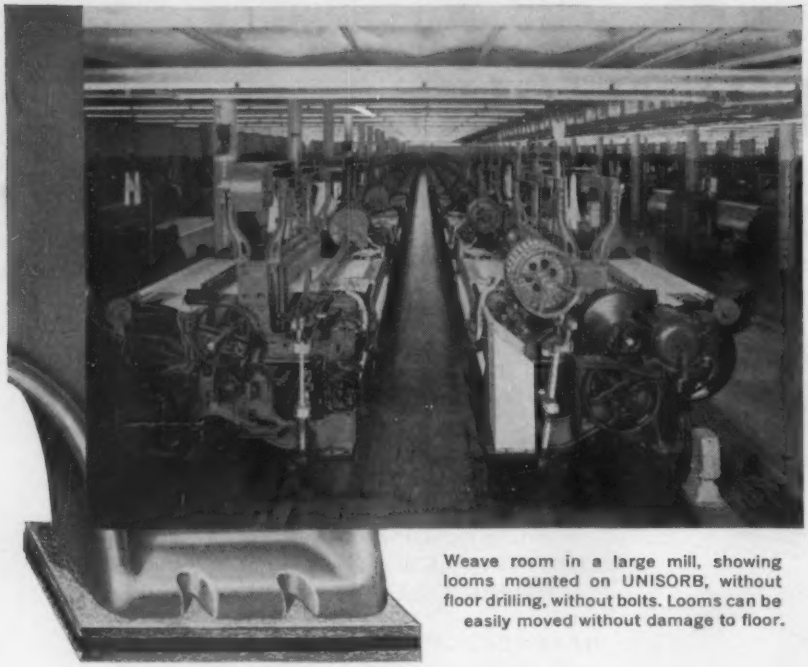
VITAFILM is now being successfully used on automatic overwrap equipment by many manufacturers of sheets, pillow cases and other textile products.

For further information, for help in adapting VITAFILM to your product, write the Goodyear Packaging Engineer, Goodyear, Packaging Films Dept. D-6428, Akron 16, Ohio.

**Vitafilm** *a new* **GOODYEAR PACKAGING FILM**

Vitafilm, a Polyvinyl chloride–T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

*We think you'll like "THE GREATEST STORY EVER TOLD"– every Sunday–ABC Radio Network – THE GOODYEAR TELEVISION PLAYHOUSE – every other Sunday–NBC TV Network*



Weave room in a large mill, showing looms mounted on UNISORB, without floor drilling, without bolts. Looms can be easily moved without damage to floor.

Another Textile Mill Mounts Looms on

**UNISORB®**

You can now get these advantages by mounting all kinds of textile machines on UNISORB pads:

- 10% to 20% saving of installation labor
- no drilling of wood or concrete floors
- reduce vibration 60% to 85%
- increase machine efficiency and life
- improve mill working conditions

For the facts about these advantages, including increased efficiency of machines and workers, return the coupon for your copy of the UNISORB Textile Machinery Booklet. It's free, and you're under no obligation.

Look for the red center and **UNISORB** brand mark

The **FELTERS** Company
234 SOUTH STREET, BOSTON 11, MASS.

**Offices:** New York, Philadelphia, Chicago, Detroit, St. Louis
**Sales Representative:** San Francisco
**Mills:** Johnson City, New York; Millbury, Mass.; Jackson, Mich.; New York City
**Distributed by THE INDUSTRIAL SUPPLY CO., Clinton, S. C.**

***RETURN COUPON NOW!*** Please send me a copy of the booklet "Why It Pays to Anchor Textile Machines on UNISORB".

Name.....Title.....
(Please Print)
Company.....
Address.....
City.....Zone.....State.....


balling head even while it offers the opportunity of a big increase in each machine's production.

F. ANDERSON

Spinners Limited
Huntingdon, P. Q.

## CORRECTION

Dear Editor:

We appreciated your announcement of our Vydul on Page 131 of the February issue of TEXTILE WORLD.

We do want to point out that Vydul is a delustrant, not a detergent, for nylon tricot.

L. B. ARNOLD, JR.

Vikon Chemical Co.
Cambridge, Mass.

[We regret the error and are glad to set the record straight.—Ed.]

## WHAT ARE YOUR COSTS?

Dear Editor:

The total cost of producing a textile product is the sum of individual department costs plus the plant fixed charges. Control and reduction of department costs are the greatest factors in maintaining or attaining profitable competitive prices for the finished products.

Methods used in many mills in estimating and reporting department costs are confusing to the department head and afford very little aid in gauging or controlling his unit costs. The unit cost figures, usually supplied, include all fixed plant costs added to the actual department operating costs. There are items of cost included that are of little concern to the department head. He has no control over the incurrence of these expenses or of their arbitrary allotment to his department.

Alert department heads generally recognize four important elements in their operating labor costs over which they can have effective control:

1. The total units of finished product made in the department
2. The total amount of the payroll
3. The total cost per unit (pound, yard, etc.)
4. The ratio of indirect labor cost to the direct labor cost

These totals are broken down to cover each different operation and to definitely locate any increase of actual costs over the established standard costs. If a simplified, weekly analysis along these lines can be furnished by the cost department, it would make a comparison between standard and operating costs more reliable and help in detecting and locating causes for increased department costs.

CONTINUED ON PAGE 192

**BEARING PROBLEMS?** ------Call on

# NEW DEPARTURE

# PDQ*!

*

## PRICE

Feed-back principles are employed in this ball race form grinder at New Department. The machine automatically adjusts to maintain specified tolerances. More perfect pieces per hour mean lower costs for the bearing user.

*

## DELIVERY

Speed with precision extends to the shipping room. This New Departure wrapping machine seals bearings in protective paper automatically, untouched by human hands. You can count on New Departure to meet the demands of *your* delivery schedule.

*

## QUALITY

Quality control is of prime importance in the high-volume, ultra-precision manufacture of ball bearings. Balls are automatically inspected by an electronic scanning device that operates with a speed and accuracy considered to be impossible a few years ago.

## PLUS ENGINEERING SERVICE

New Departure engineers are ready to help with your ball bearing problems. And when you consult with New Departure you get the benefit of more than 50 years' experience in ball bearing design and manufacture. Call, wire or write . . . New Departure can help you . . . PDQ!

**NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.**

**NEW DEPARTURE**

**BALL BEARINGS**

NOTHING ROLLS LIKE A BALL

 For more information, write direct or use Reader-Service post card. 

*To all textile mills:*

# Brainard® gives you UNIFORM HIGH QUALITY Strapping ...at no extra cost

● Brainard has complete control of manufacture . . . from ore to finished strapping. This integrated operation results in the best possible quality control. Every strapping order is carefully inspected by steel craftsmen at each step in the production process.

Brainard tensional strapping, produced in our own rolling mills, is furnished in continuous length, oscillated wound coils. It is coated with a high lustre, rust-resistant, black-painted or electro-galvanized finish.

Formed edge strapping is available for use on cylindrical packages where conventional strapping has a tendency to slip, such as on large rolls of paper.

The next time you order steel strapping, call your nearby Brainard representative. Let him show you how Brainard quality can improve strapping performance . . . at no extra cost! If you would like to have a Brainard representative call, write to Brainard Steel Division, Dept. T-4, Griswold Street, Warren, Ohio.

Brainard®
SHARONSTEEL
STEEL DIVISION
SHARON STEEL CORPORATION

**COMPLETE STRAPPING SYSTEMS & MATERIALS • WELDED STEEL TUBING • ELECTRO-GALVANIZED STEEL • SCAFFOLDING • PALLET RACKS • BUILDING PRODUCTS**

*Offices in principal cities throughout the U. S.*

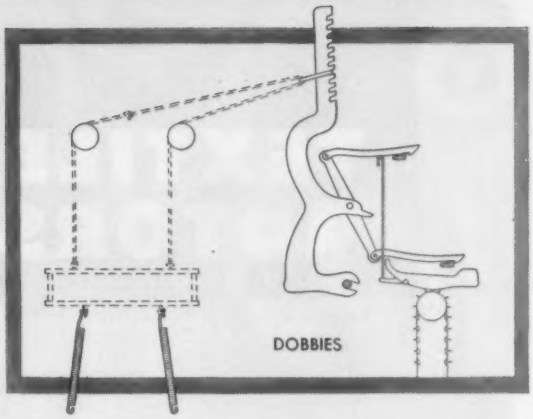


For more information, write direct or use Reader-Service post card.

No. 6 in a series explaining

# Why C&K's New Multi-Purpose Looms mean More Profit to any mill

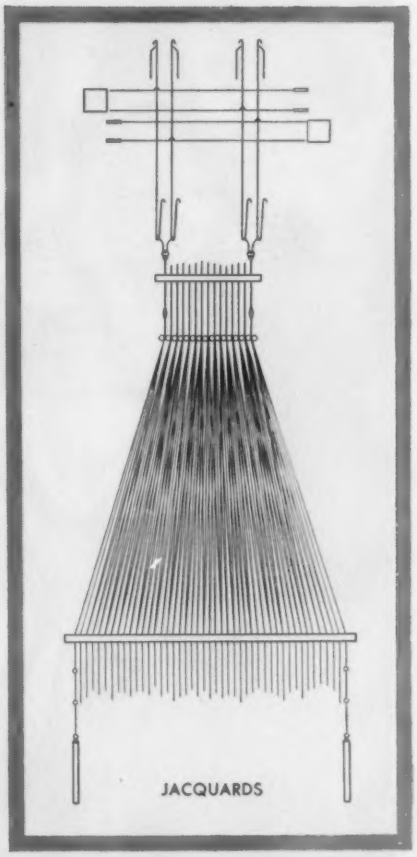
## NOW . . . for the first time
## . . . M-P Makes Possible
## a choice of 4
## SHEDDING MECHANISMS
## . . . on the same
## Basic Loom-Frame

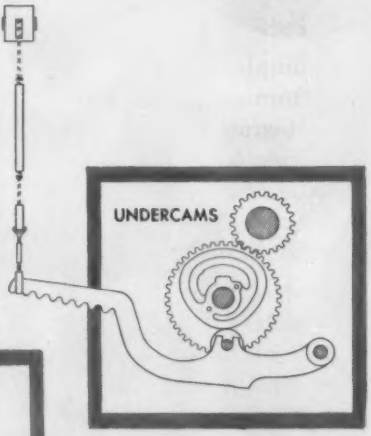


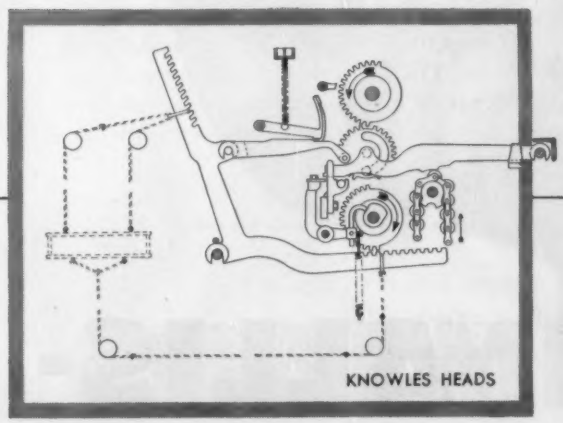

Whichever of these four mechanisms is chosen now, it may be converted later if changing fashion requirements make it necessary.

*Here is your range of choice:* From the simplest *Undercam* harness motion for 2, 3, 4, 5 or 6 harness work . . . through *Dobbies* with their smooth action for easily fractured filament or other tender yarns, and with capacity up to 25 harness, with high-speed operation . . . and also newly developed 20 and 25 harness *Knowles Head* motions with their distinctive positive shedding . . . to modern high-speed *Jacquards* of French, Fine or Vincenzi index, with 104 to 2640-hook capacity for the ultimate in decorative effects.

This range of choice is sound insurance for *you*. So see C&K today, for the M-P Looms exactly suited to your needs.




*Crompton & Knowles*
*LOOM WORKS*

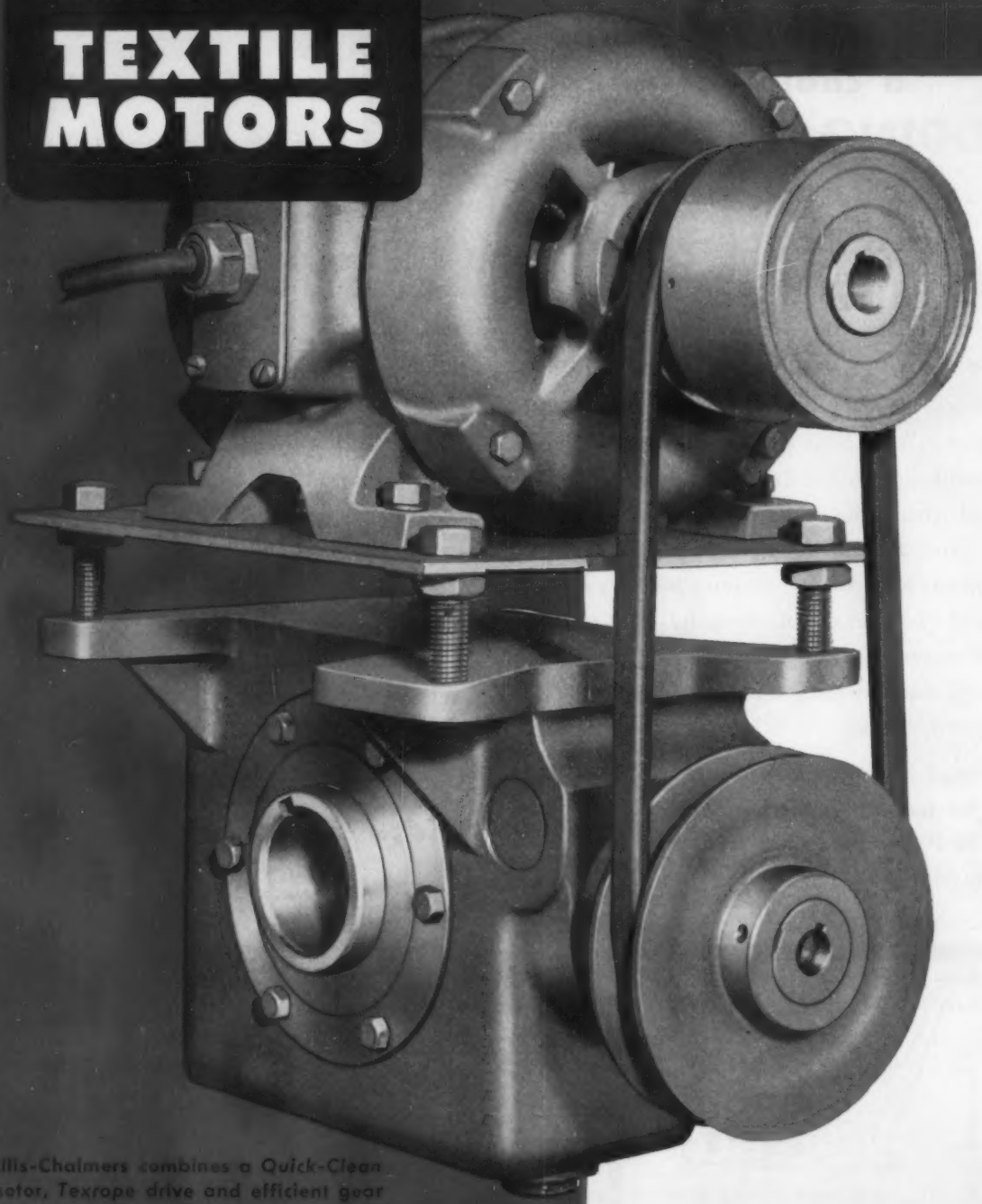
**WORCESTER 1, MASSACHUSETTS, U. S. A.**

**Charlotte, N. C. • Philadelphia, Pa. • Allentown, Pa.**
**Crompton & Knowles Jacquard & Supply Co., Providence, R. I.**
**Crompton & Knowles of Canada Limited, Montreal, Quebec**

# MAKE YOUR CARD ...Cleaner

ALLIS-CHALMERS

TEXTILE MOTORS



Allis-Chalmers combines a *Quick-Clean* motor, *Texrope* drive and efficient gear reducer to make a compact, reasonably priced power-package for cards.

ALLIS-

# ROOM more Efficient and Safer

INDIVIDUAL machine control permits greater flexibility and more efficient machine usage. There is no large, unguarded belt to throw dirt and grease into the material or catch hands or clothing.

There's no need to move cards to install this drive. Unit requires practically same floor space as tight-and-loose pulley drive. It is mounted directly on the card shaft — independent of the card arch — with torque arm to keep gear box from rotating. There's no strain on card arch to cause vibration or distortion of air gap between flats and main cylinder. Constant speed results in higher quality.

## Cuts Maintenance, Too!

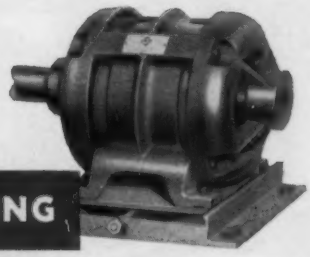
No heavy, expensive belts to replace . . . no dirt-catching belt dressing. In addition, the drive is practically vibrationless, increasing life of card and making it easier to keep in adjustment.

Allis-Chalmers textile specialists are located in District Offices in textile areas throughout the country to help you with your drive problems. For more information on Allis-Chalmers Textile Drives, call your nearby A-C District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin, for these bulletins:

| | |
|---|---|
| Handy Guide to Motor Selection | 51B6052 |
| *Quick-Clean* Textile Motors | 51B6055 |
| Individual Card Drives | 51B7867 |
| Loom Motors | 51B7111 |
| Roving Frame Motors | 51B7896 |
| Handy Guide to *Texrope* Drives | 20B6051 |

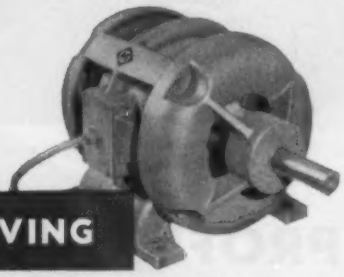
*Quick-Clean* and *Texrope* are Allis-Chalmers trademarks.

## OTHER ALLIS-CHALMERS TEXTILE DRIVES



**SPINNING**

Wide open air passages and powerful fans of *Quick-Clean* design sweep dirt and lint right through and OUT of these motors. Sealed, double-width bearings.



**ROVING**

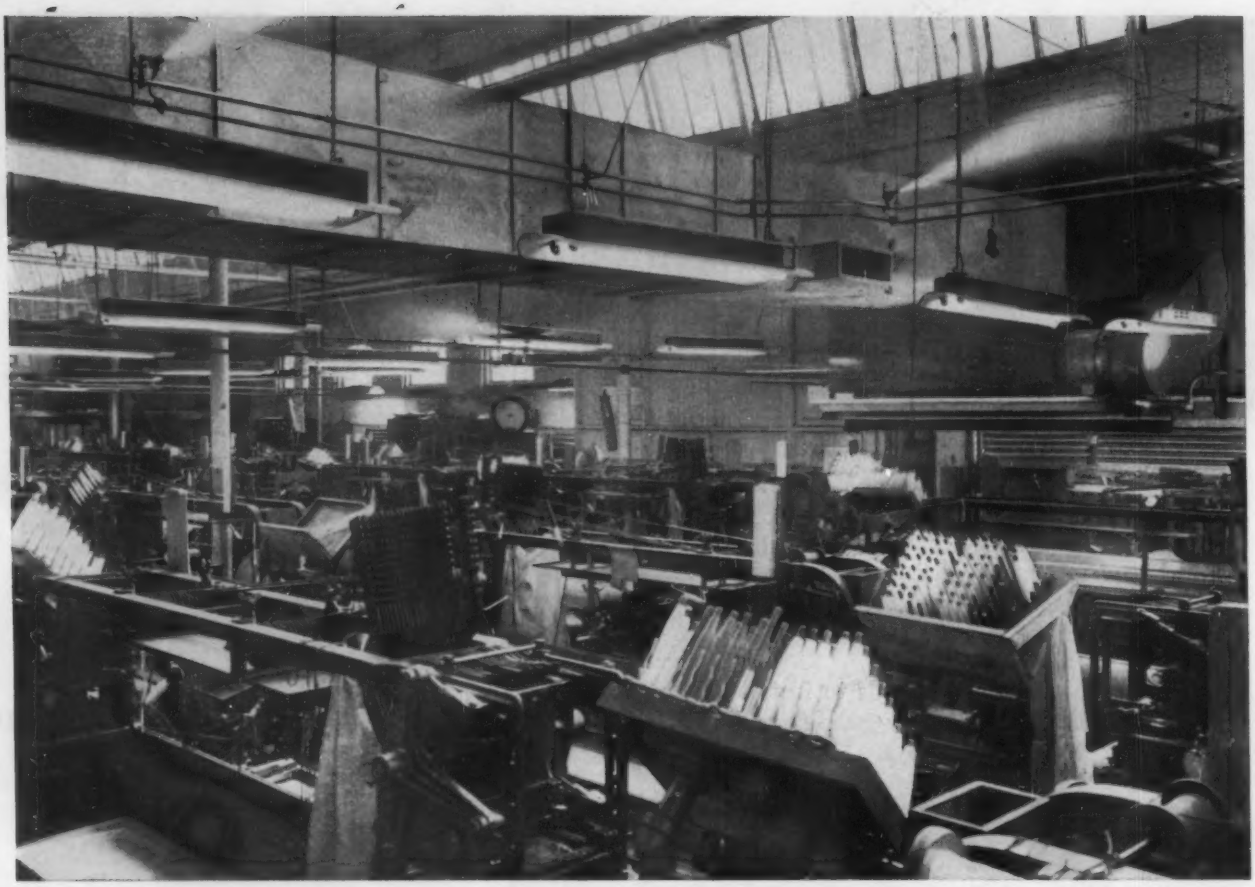
*Quick-Clean* motor with special slow acceleration characteristics. Takes almost three times as long as standard motor to reach operating speed. No special control required.

**WEAVING**

Allis-Chalmers loom motor has oversize rotor, stator and bearings. Rotor diameter is as great as possible to provide maximum inherent flywheel effect, while slip has been regulated to produce minimum speed variation. External flywheel can be furnished for looms requiring still greater $Wk^2$.

**CHALMERS** A-C ALLIS-CHALMERS

A-4622



Unit Dry-Duct System installed at Rhode Island Fabrics Company, Pawtucket, Rhode Island

# PROFIT'S IN THE AIR

## . . . with AMCO Unit Dry-Duct Air Conditioning

In a textile mill, reliable, efficient air conditioning can be a big factor in the profit picture. When floor space is at a premium, a central station installation may be out of the question. Faced with this problem, many mills have found a profitable answer in the Amco Unit Dry-Duct System.

This system consists of a self-contained air conditioning unit, distribution ducts and room atomizers. The air conditioning unit itself is compact and can be installed overhead, out of the way, where it will not take up valuable mill floor space. Automatically operated louvers supply fresh air and recirculated air, in proper proportions, to the air conditioning unit. The air is filtered if desired, and then heated as required. This "dry" air is distributed to the working area through ducts. Humidification and evaporative cooling are provided by atomizers located in front of each air duct. Automatic controls hold relative humidity and temperature at the desired levels. Spent air and heat are exhausted automatically through vent louvers.

The Unit Dry-Duct System is only one of the many types of air-conditioning systems manufactured, engineered, and installed by Amco. The facts about textile mill air conditioning — the advantages and disadvantages of each type of system — are fully covered in Amco's booklet "Air Conditioning for the Textile Industry." Write today for your own copy of this Amco booklet.

AMCO

**AIR CONDITIONING SYSTEMS since 1888**

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • ATLANTA • BOSTON • CAMDEN • CHARLOTTE • AFFILIATED WITH GRINNELL COMPANY, INC.

# NATIONAL ANILINE EXCLUSIVE

## CARBANTHRENE® OLIVE G PASTE

**for maximum light fastness and excellent weathering fastness on cotton and rayon**

Here's another National "exclusive" that combines excellent all-around fastness properties in a true yellowish-olive shade.

National Carbanthrene Olive G Paste has maximum light fastness; excellent fastness to weathering, washing and wet processing. Cotton and rayon dyed with it may be resin-finished or rubberized with no loss in fastness and only a slight change in shade. All-in-all, it's an unusually useful National vat with a unique combination of properties for fabrics that must withstand sun and rain, washing and hard wear.

Write or phone our nearest office for a shade card (ask for Bulletin #395), working sample and price.


**NATIONAL ANILINE DIVISION**
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

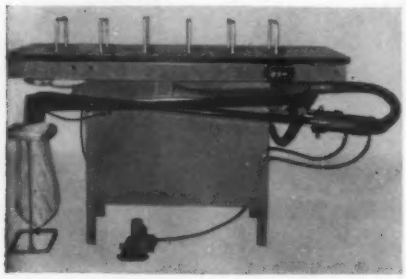
Boston Providence Philadelphia Chicago San Francisco
Portland, Ore. Greensboro Charlotte Richmond Atlanta
Los Angeles Columbus, Ga. New Orleans Chattanooga Toronto

# SOUTHERN TEXTILE MACHINERY CO., INC.

*Manufacturers of World Famous SOTCO Loopers*

# *Proudly Announces*

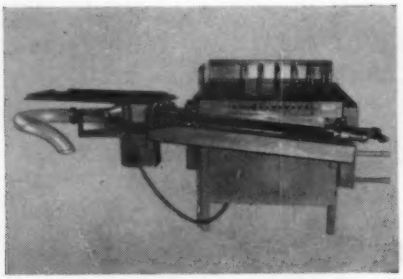
## THEIR COMPLETE LINE OF INSPECTION MACHINES FOR LADIES' FULL-FASHIONED AND SEAMLESS HOSIERY



**SOTCO Pneumatic Inspection Machine, Model 6000**

This machine is a little brother to SAIM (shown to right). With this machine, it is possible to double the average production obtained on conventional flat forms. The form expands and collapses by air pressure. When the form is collapsed, the stocking is drawn through the center of the form by vacuum pump to fingers of the stacking attachment. The stacking attachment then stacks the stockings in a container or, if preferred, places them in a bag. This machine is designed to fit the pocketbook of the small mill owner who cannot afford the more expensive and productive SAIM.

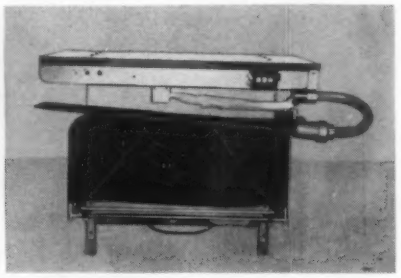
***Floor Space*** . . . . . **40"x58"**



**SOTCO Automatic Inspection Machine, Model 4000**

Although deliveries of this machine began as late as September of 1953, already over ten percent of the ladies' full-fashioned hosiery manufactured in the United States is being inspected on this type. Before SAIM (as it is often called) was introduced, the average production on conventional forms was eighty to ninety dozen per eight hours. Now, it is possible to average two-hundred and thirty pairs per eight hours with a thirty percent (30%) improvement in quality of inspection. Machines are available for the preboarding method of finishing or with turning tube for other methods. SAIM is the fastest, most efficient inspection machine for ladies' full-fashioned hosiery on the market today.

***Floor Space*** **(with Turning Tube) 63"x90"**
**(with Stacking Attachment) 56½"x114"**



**SOTCO Pneumatic Inspection Machine, Model 5000**

This is a small simple machine designed primarily for ladies' seamless hosiery. The form does not expand and collapse. The seamless stocking is pulled on the form, trimmed, and when inspected, given a slight push with the hand. It is drawn through the center of the form by vacuum pump and stacked neatly in a container or placed in a bag, whichever is desired. This machine increases production approximately one-third over conventional hand methods.

***Floor Space*** . . . . . **40"x70"**

# SOUTHERN TEXTILE MACHINERY CO., INC.

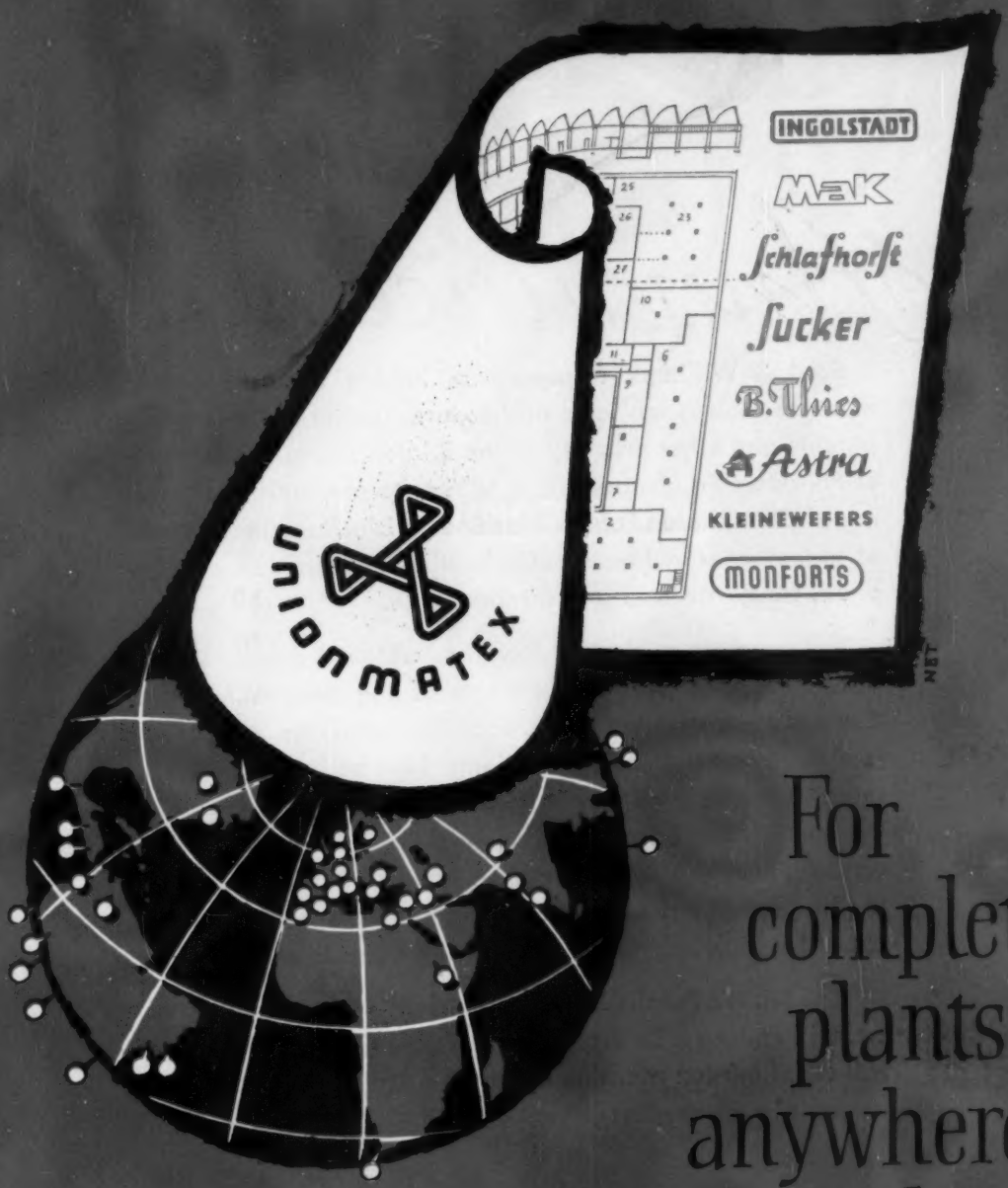
**SECOND AND NORTON STREETS**

**PADUCAH, KENTUCKY**

***Sales Representatives***

All three machines will be sold exclusively by the Southern Textile Machinery Company of Paducah, in the United States. Sales in Canada will be handled by W. J. Westaway Company Limited, Hamilton, Ontario, Canada; sales in England and continental Europe will be handled by G. Stibbe & Company Limited, Great Central Street, Leicester, England. Prices and detailed information is available on request.

INGOLSTADT: SPINNING MACHINERY FOR COTTON-WORSTED-CUT RAYON · MAK: CARD SETS · SELF-ACTING MULES · RING SPINNING FRAMES · SCHLAFHORST: MACHINES FOR WINDING-WARPING AND SECTIONAL WARPING · SUCKER: SIZING MACHINES · SIZE MIXING AND COOKING INSTALLATIONS · THIES: DYEING AND BLEACHING PLANTS FOR YARNS AND CARD-SLIVERS OF ALL KIND · ASTRA: WEAVING MACHINES FOR COTTON-, WOOL- AND SPECIAL FABRICS e. g. FELTCLOTHS · JACQUARD-WEAVING MACHINES · KLEINEWEFERS: CALENDERS · MANGLES · PRINTING-, MERCERIZING-MACHINES · CONTINUOUS BLEACHING AND DYEING PLANTS · MONFORTS: FINISHING MACHINERY · MEASURING, INSPECTING, PLAITING, ROLLING AND DOUBLING MACHINES FOR ALL KINDS OF CLOTH




# For complete plants anywhere in the world

2nd INTERNATIONAL TEXTILE EXHIBITION BRUSSELS 1955 25 June – 10 July HALL 5

**UNIONMATEX** TEXTILMASCHINEN-UNION GMBH · FRANKFURT/MAIN

NEUE MAINZER STR. 22 · TELEPHONE: 92552 · CABLE: UNIONMATEX · TELEPRINTER 041 9187

# *Announcement*

**Scott & Williams, Incorporated, having acquired certain machine tools, shop tools and fixtures, patterns, inventories, patents and other property of the Brinton Machine Company of Philadelphia, Pennsylvania, wishes to announce the forming of "The Brinton Fabrics Machine Division" for the purpose of manufacturing fine circular knitting machines to produce plain, fancy, rib and jersey fabrics.**

**This newly formed division will be able not only to supply and service the former customers of the Brinton Machine Company but with the added facilities, resources, experience and equipment of Scott & Williams, Inc., be in a position to improve the over-all service as well as machines. It will be the aim of "The Brinton Fabrics Machine Division" to keep a constant supply of spare parts on hand at all times in order to give prompt and efficient delivery of all customers' requirements for both Brinton and Scott & Williams machines.**

**"The Brinton Fabrics Machine Division" of Scott & Williams, Inc. will endeavor in every way possible to retain the goodwill of all Brinton machine users with competent service and congenial customer relationship.**

**SCOTT & WILLIAMS, INC.**

**SCOTT & WILLIAMS, INC.**
**THE BRINTON FABRICS MACHINE DIVISION**
**WHITMAN D. IDE, General Manager**

DAVID B. BRINTON, Sales Manager
GEORGE McDOWELL, Sales Engineer
JOSEPH M. OLACHEA, Sales Engineer
} Formerly with Brinton Machine Co.

*Sales Engineers*

ROY W. BENNETT — JOHN G. SCHMIDT
FRED H. HALLENBECK — ALTON W. NEALLEY
JOSEPH S. HUBBARD — JOHN R. SEYMOUR

For further information call or write
**SCOTT & WILLIAMS, INC.**
**THE BRINTON FABRICS MACHINE DIVISION**
*Main Offices and Plants*
**LACONIA, NEW HAMPSHIRE**

**Sales Office:**
Empire State Building, New York 1, N. Y.

**Divisional Offices:**
Reading, Pa. High Point, N. C. Chattanooga, Tenn.

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau*

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY

FOR COTTON, STAPLE FIBRE AND WORSTED

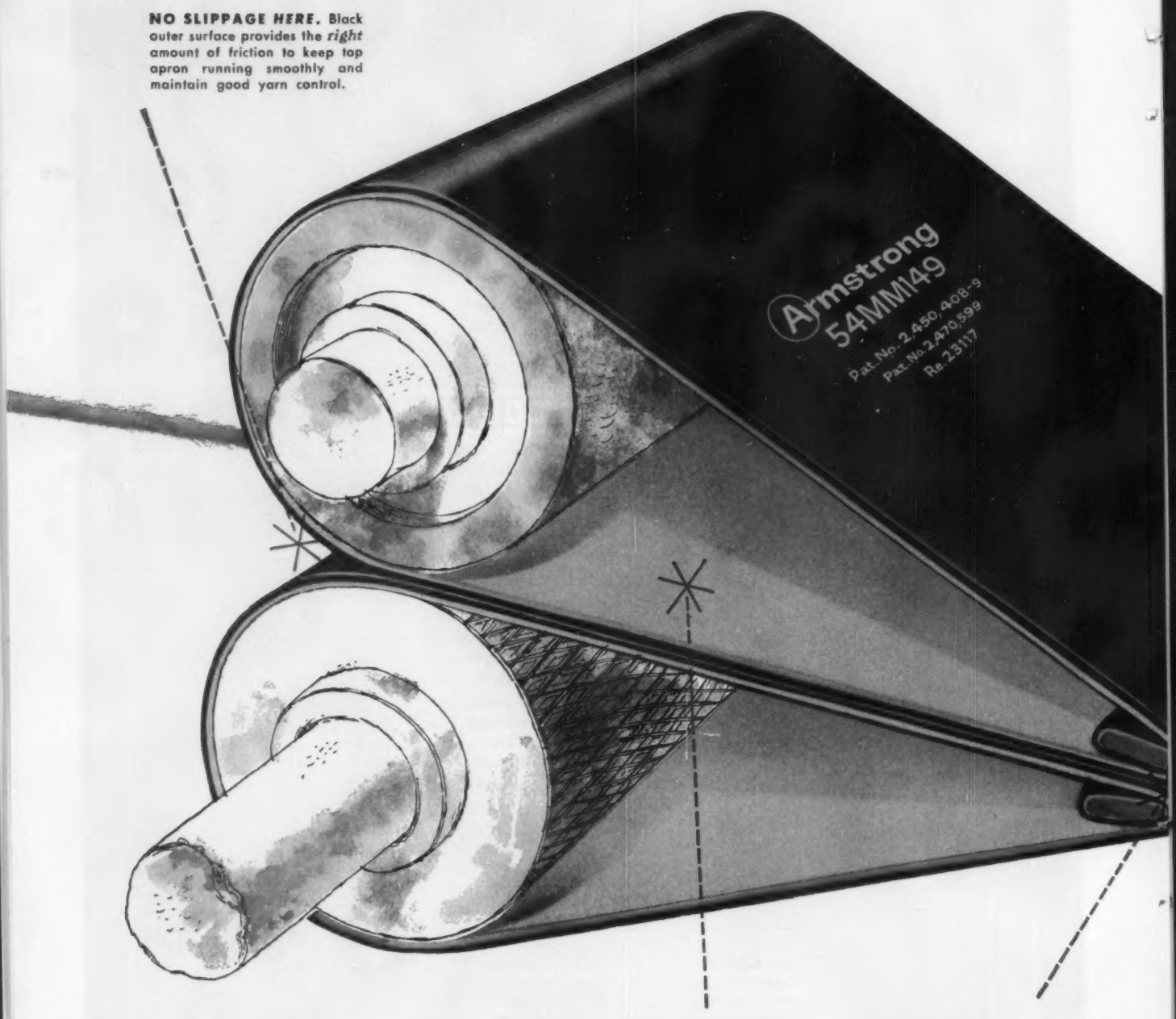
Design and supply of complete spinning plants based on latest experience in spinning and engineering · Conversions

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau*

INTERNATIONAL TEXTILE FAIR, BRUSSELS. — JUNE 25th — JULY 10th, 1955. BOOTH UNIONMATEX — HALL 5

# This specially designed

**NO SLIPPAGE *HERE.*** Black outer surface provides the *right* amount of friction to keep top apron running smoothly and maintain good yarn control.




**RUNS CLEANER *HERE.*** White inner face won't attract loose fibers, helps prevent formation of hard-to-clean deposits on the inside of the apron.

**RUNS SMOOTHER *HERE.*** Controlled surface friction of inner face permits smooth transfer of power from driving roll to apron—yet prevents buckling.

For more information, write direct or use Reader-Service post card.

# two-surface apron gives

# good yarn control on double-apron frames

**Armstrong NO-7075 Accotex® Apron**
**spins clean, uniform yarn month after month**

Here are two important points to remember when you're choosing aprons for your new long-draft, double-apron equipment. The apron's outer surface has to provide just the right amount of friction to drive the top apron without slipping, yet maintain good drafting tension on the roving. The inner surface must grip the drive roll firmly for sure transfer of power and still slip freely over the pin without jamming.

Armstrong NO-7075 Accotex Apron has been designed specifically to meet this double requirement. Two special, high-quality synthetic rubber compounds were developed to give the inner and outer apron surfaces the exact characteristics they need. And both rubber compounds were formulated for long, efficient service. Any mill man using the NO-7075 will tell you this black-and-white apron assures perfect yarn control even after months of day-in, day-out wear.

What's the difference between the surfaces of the NO-7075 Apron?

**The inside surface**—a white rubber compound—has a coefficient of friction low enough to prevent jamming or buckling at the pin, but high enough to assure a firm grip on the drive roll. This surface runs clean, too. Special electrolytes in the compound tend to repel loose fibers and prevent build-up of hard-to-clean deposits.

**The outside surface**—black rubber compound—provides higher friction than the inner surface. This is necessary to drive the top apron without slipping. Yet friction is not high enough to interfere with good running. This compound has high resistance to tearing and abrasion.

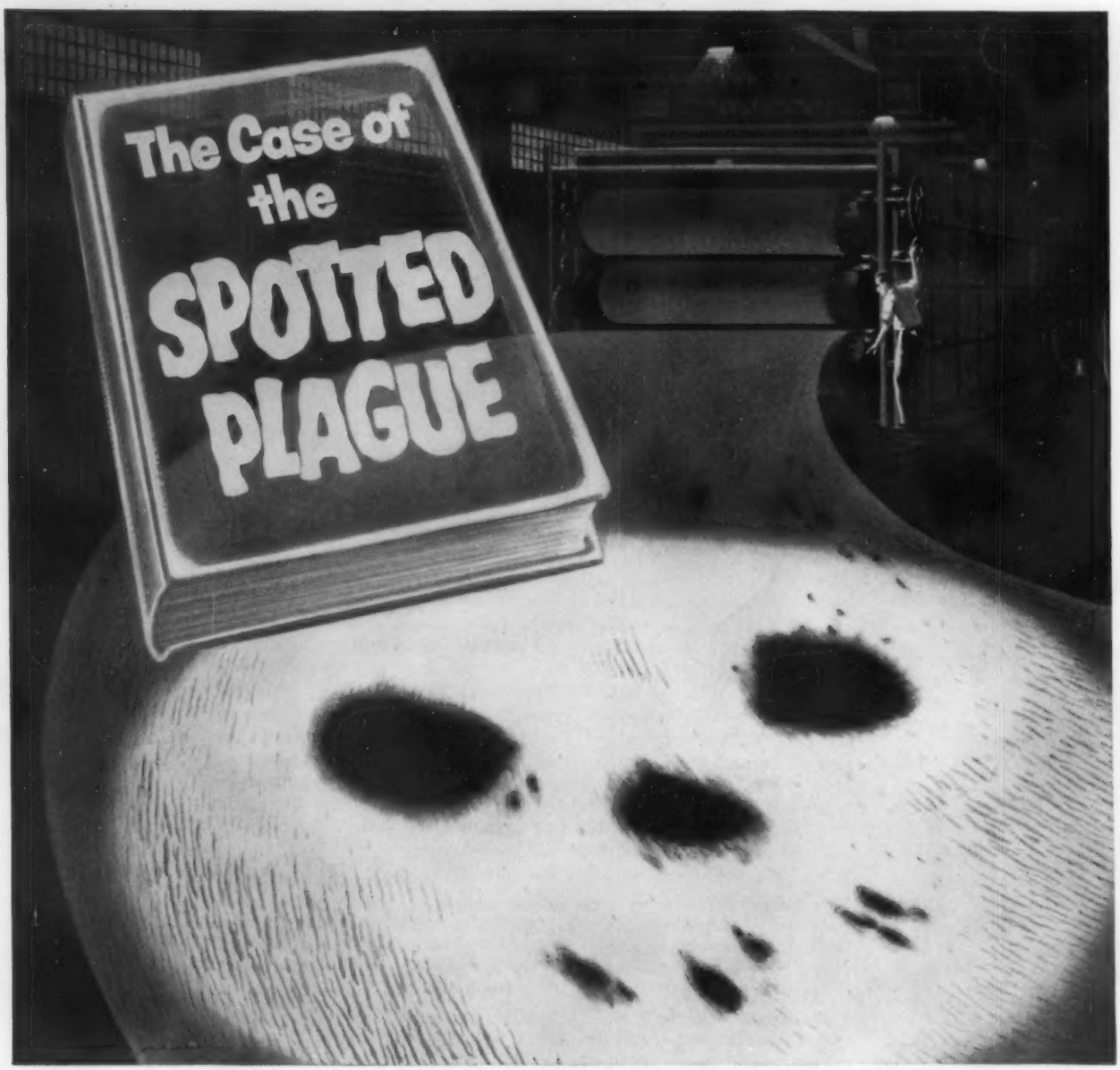
**Try NO-7075 Accotex Aprons yourself.** A test in your mill will prove to you how well they work on double-apron frames. Ask your Armstrong man to set up a test frame or write direct to Armstrong. And for the free booklet, "Armstrong Textile Roll Coverings and Mill Supplies," write Armstrong Cork Company, Industrial Division, 6404 Dauphin Street, Lancaster, Pennsylvania.

**FOR SINGLE-APRON SPINNING,** use super-flexible Armstrong NO-750 Apron. This long-wearing apron is specially made to give the smooth slip-roll action needed for strong, uniform yarn. NO-750's satin-smooth surface lasts for years without cracking, breaking, or scuffing.

**Armstrong ACCOTEX APRONS**

*. . . used wherever performance counts*

For more information, write direct or use Reader-Service post card.




## *How Correct Lubrication cured it—and saved $10,000 a year!*

Stretched taut between two endless tenter chains, the broad band of felt revolved slowly through the long, cavernous dryer. This was premium, snow-white felt, handled with special care to prevent staining. But repeatedly, despite all precautions, the felt emerged dotted with ugly dark spots.

For years, these black spots had plagued a large felt plant. They knew the cause...grease and oil, used on chains and rollers, melted under dryer heat of 240°F. and dripped down on the felt. All attempts at a cure had failed. Production loss was $10,000 annually!

Socony-Vacuum men, making an analysis of plant machinery, tackled this problem at once. After careful study they recommended special Gargoyle lubricants, set up proper lubrication schedules, trained plant personnel in new application methods. Today, at an annual cost of $30 for dryer lubricants, the company is saving the $10,000 it previously lost!

This entire plant is now protected by a program of Correct Lubrication that has improved production and cut costs in every department. Why not see what such a program can do for you?

SOCONY-VACUUM

**SOCONY-VACUUM** *Correct Lubrication*

**FIRST STEP IN CUTTING COSTS**

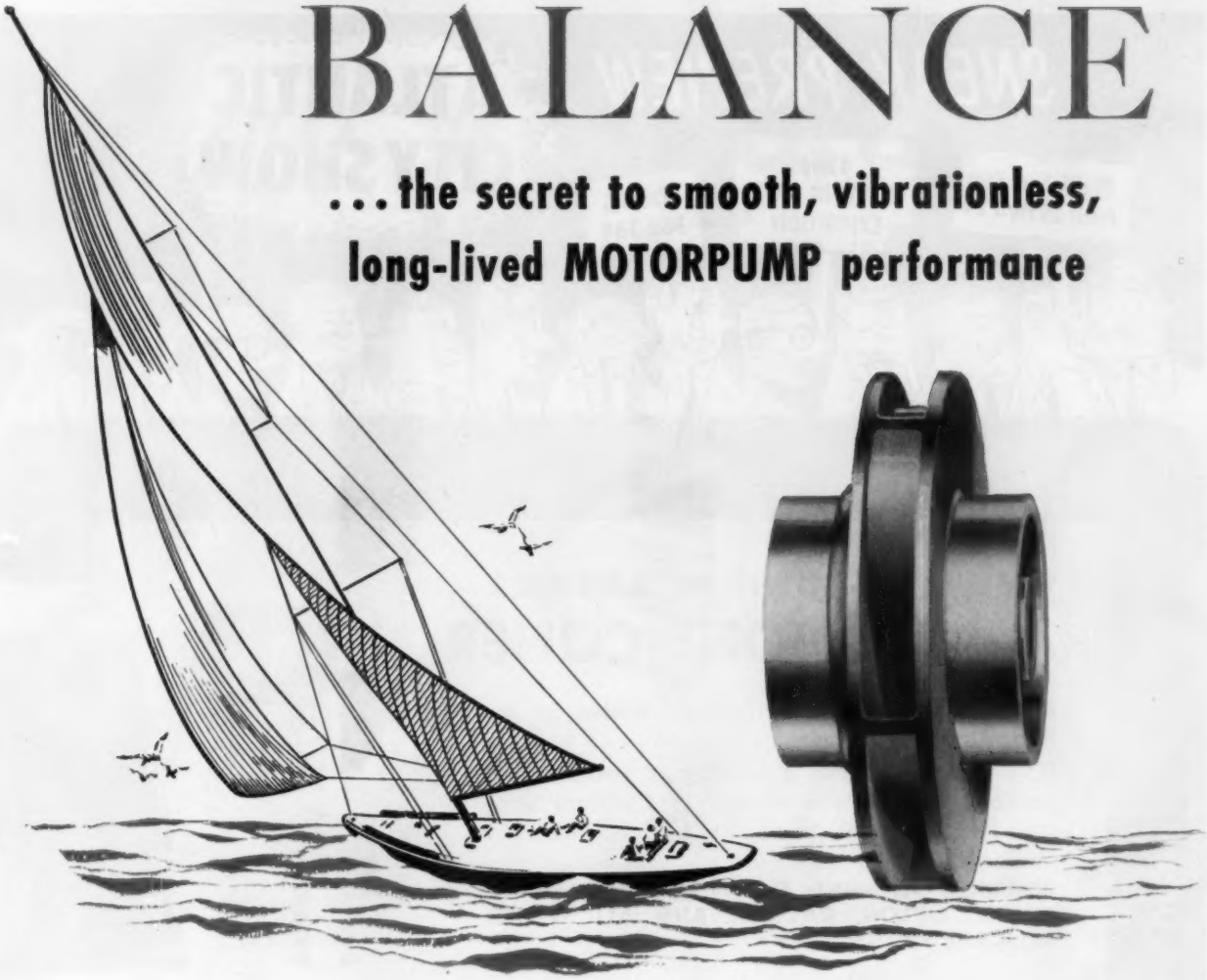
SOCONY-VACUUM OIL CO., INC., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.



For more information, write direct or use Reader-Service post card.

# BALANCE

## ...the secret to smooth, vibrationless, long-lived MOTORPUMP performance



**MECHANICAL BALANCE**

Is achieved by an even distribution of metal in the impeller, which keeps the radial load on the bearings and shaft at a minimum. The impeller of I-R Motorpumps is subject to critical balance tests to insure smoothness, quietness, freedom of vibration. These tests are your assurance of efficient pump performance, long trouble-free operation, a minimum of wear on close running parts.

**HYDRAULIC BALANCE**

In the Motorpump contributes materially to long-life and low maintenance. The engineered use of a balancing orifice stabilizes the forces acting axially on the impeller. Hydraulic balance, thus achieved, lowers the thrust load on the bearings and increases the life of the pump. It also keeps stuffing-box pressure low, which lengthens packing or seal life and reduces maintenance.

BALANCE is a law of nature which creates orderliness amid strong opposing forces. Without it there can only be swift moving forces that lead to destruction. That's why *balance* is always uppermost in the minds of I-R designers and engineers.

Balance . . . careful design . . . these hold the secret to volume flow through *small* units. This explains why Ingersoll-Rand Motorpumps are so efficient . . . why I-R Motorpumps so often outperform other pumps of the same size.

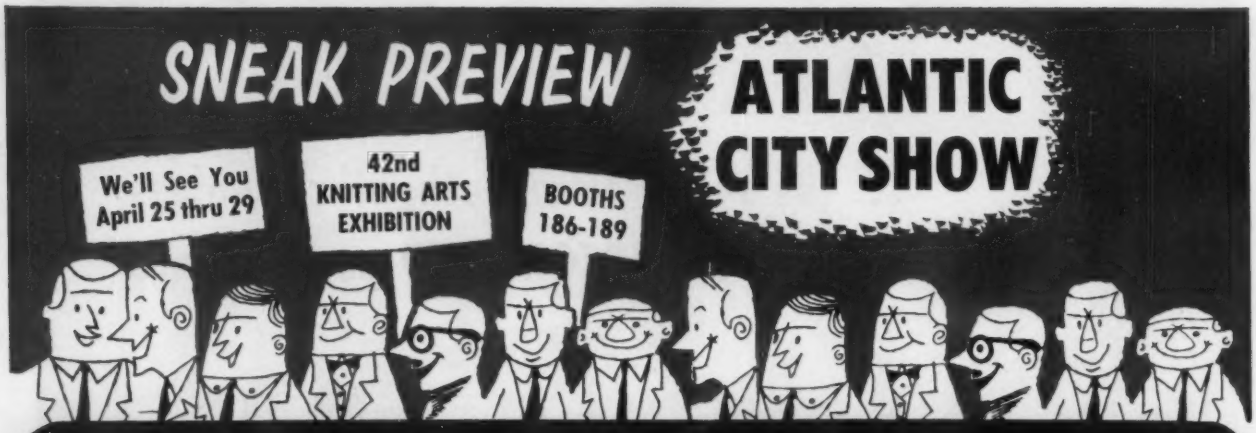
Ingersoll-Rand Motorpumps are available FOR IMMEDIATE SHIPMENT in sizes from 1/4 to 75 hp. Call our nearest branch office or write direct.

**Ingersoll-Rand**

975-9 **11 Broadway, New York 4, N. Y.**

# SNEAK PREVIEW

## ATLANTIC CITY SHOW



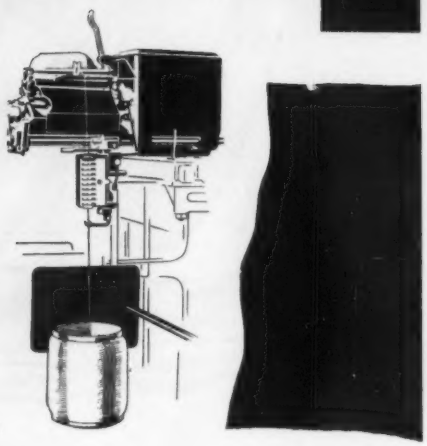

**1ST TIME SHOWN IN AMERICA**

## Schweiter MONOFIL-CONER

**for Throwsters and the "Pineapple" Bobbin for the Hosiery Trade — Features . . .**

Schweiter "Penta" wind for slippery yarns • Soft packages • Uniform density • Constant yarn speed • Constant tension • Uniform Moisture Content

**DESIGNED TO WIND THE FINEST DENIERS OF NYLON, ORLON, DACRON AND ALL OTHER DELICATE YARNS**



## SCHWEITER LTD.

HORGEN (ZURICH) SWITZERLAND

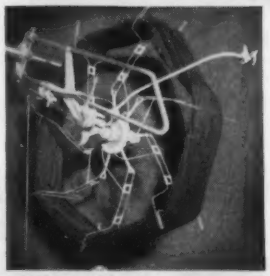
**. . . AND DON'T MISS**

## Schweiter VARIO CONER

**for winding all spun yarns to a perfect knitting cone of . . .**

Uniform density • Hard or soft • With progressive conicity • Automatic stop motion for entanglement in the skein • Independent winding units • Gears running in oil • Patented gear-driven waxing device • Differential gearing for ribbon wind prevention • Genuine sapphire thread guides

**DESIGNED TO WIND ALL "DIFFICULT" YARNS — CASHMERES, BOUCLES, RATINEES, ORLON, NYLON, ACRILAN WOOL WORSTEDS, ETC.**



**All metal Swift, adjustable for skeins from 46 to 72 inches**

Sales and Service in the United States and Canada

## The AMERICAN SCHWEITER COMPANY

WHITINSVILLE, MASSACHUSETTS • SOLE AGENTS

# *New* standards in light fastness

## LUMICREASE COLORS

**The trend is toward brighter colors, faster-to-sun, in automotive, upholstery and decorative fabrics, and LUMICREASE COLORS by Sandoz are helping to speed the trend.**

**The LUMICREASE line of direct colors was developed for cotton and viscose. Three of the newest and fastest colors are: LUMICREASE GREY 3LB, pat.; LUMICREASE GREEN 3LB, p.a.f.; and LUMICREASE ORANGE 3LG, pat. These have created new standards in light fastness in shades of green, tan, taupe and grey, and are unequalled by any other products on the market today.**

**Ask Sandoz laboratories to match your shades. Branch offices:**

**CHARLOTTE, N. C.**
**1510 Camden Road**
**FAIR LAWN, N. J.**
**Fair Lawn Ave. & Third St.**
**LOS ANGELES, CALIF.**
**467 East Third Street**
**MONTREAL, QUEBEC, CANADA**
**P.O. Box 364, Station "B"**
**CINCINNATI, OHIO**
**3712 Beechmont Ave.**
**HUDSON, MASS.**
**312 Main Street**
**PHILADELPHIA, PA.**
**2215 Tioga Street**
**TORONTO (Ont.) CANADA**
**179 King St. West**

**SANDOZ CHEMICAL WORKS, INC., 61 Van Dam St., New York 13, N. Y.**

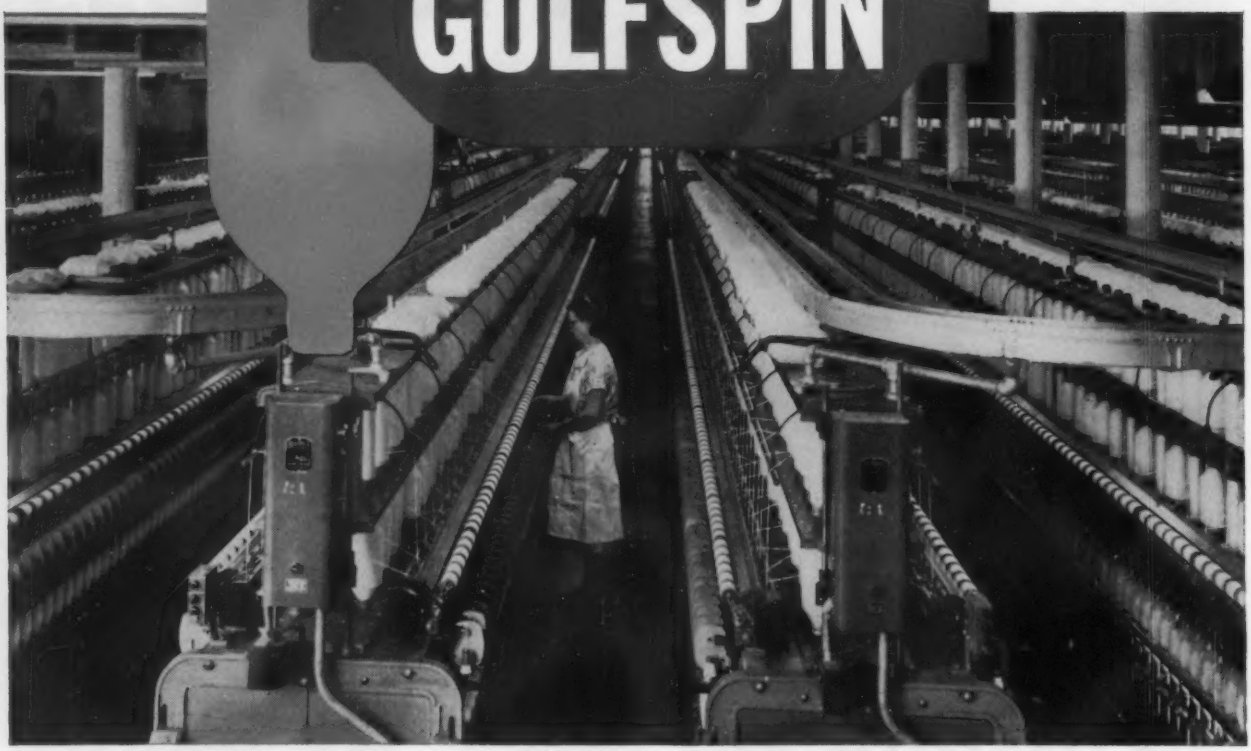
SANDOZ

SANDOZ THINKS AHEAD WITH TEXTILES

# *Keep spindles spinning true*

*with*

# GULFSPIN



Keep your spindles spinning true with a minimum of vibration and drag. Use Gulfspin, the spindle oil that resists sludge formation, that holds contaminants in suspension so they do not deposit on spindle parts, and that provides effective protection against rust.

You also reduce power costs with Gulfspin. Ordinary spindle oils often thicken after a few months of service, requiring increased power. Gulfspin shows no increase in viscosity after many months of service.

You'll find that these advantages all add up to smoother spindle operation, fewer ends down, and rock-bottom maintenance and power costs.

Contact a Gulf Sales Engineer at your nearest Gulf office today and give him a chance to prove the superiority of Gulfspin on your frames.

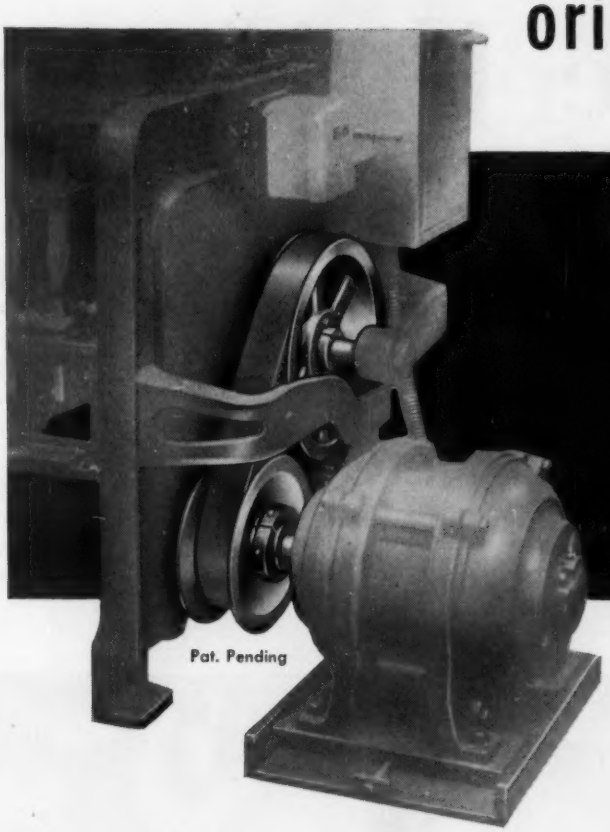
*Gulf Oil Corporation • Gulf Refining Company*

*1822 Gulf Building, Pittsburgh 30, Pa.*

GULF

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

# originated by WOOD'S




## the first NEW CONSTRUCTION VARIABLE SPEED DRIVE

## already widely accepted and used for speed control on textile machinery. . .

### Only WOOD'S gives you...

- HIGHER EFFICIENCY
- LARGER SPEED RANGE
- SINGLE WIDE BELT
- NO LUBRICATION
- LESS SHAFT OVERHANG
- MORE ECONOMY
- ADJUSTABLE AT EITHER END
- POSITIVE LOCKING
- SIMPLIFIED DESIGN

Here is the variable speed drive so many mill men are talking about. Proved in use, this wide-range Variable Speed Drive has been found to be highly satisfactory in every respect. A North Carolina mill writes "No difficulty at all has been experienced in obtaining the speeds we want within the range specified. Neither have we encountered any difficulty from the Variable Pitch Sheave's 'Freezing up'! Apparently you have overcome these problems in your design, as these drives can be adjusted to any speed within range very easily and quickly. We have had several of your drives in operation for almost two years, and the belts show no indication of any appreciable wear."

Wood's offers the simplest variable speed sheave on the market today! So easy to change speeds. Simply turn the single adjusting screw from either side to change pitch diameter. With the speed chart furnished you can adjust the sheave to the desired speed without trial and error. Simplified design provides positive clamping of the two adjustable flanges—eliminates fretting corrosion. Single wide range belt gives maximum HP efficiency. Does away with the problem of maintaining matched belts and matched grooves. (Maintenance costs go down because no periodic lubrication is necessary for the drive.)

If you are interested in lowering costs, ask for complete information on the most talked about drive in the Spin-Weave Industry, write for Bulletin #497 and the name of your nearest Wood's Distributor. No obligation.

Wood's

## T. B. WOOD'S SONS CO.

**CHAMBERSBURG, PA.**

Cambridge, Mass. • Newark, N. J. • Dallas, Texas • Cleveland, Ohio

# "33% More Uniform

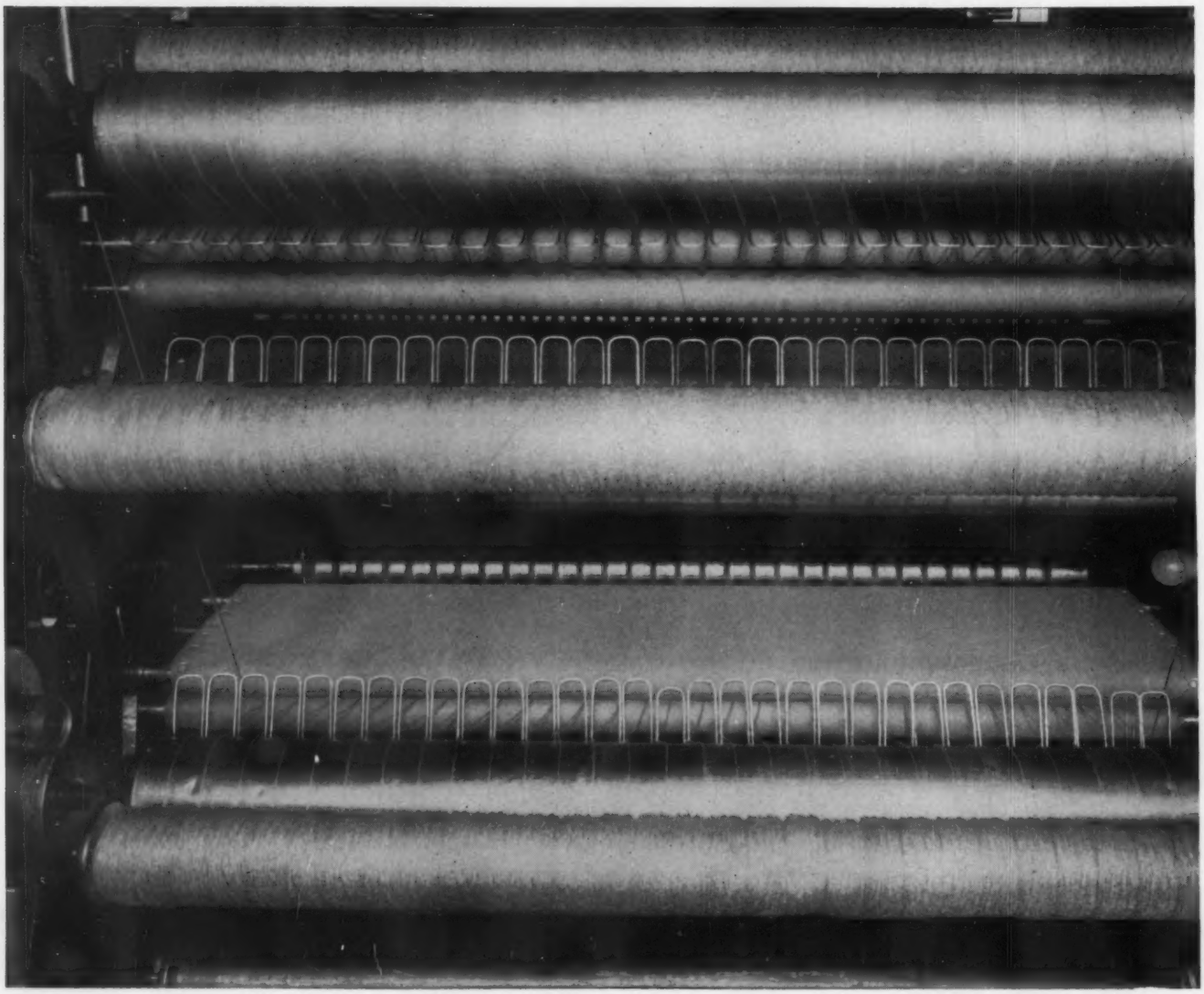
## report mills equipped with Dayco Rub Aprons and Dayco Condenser Tape.

"One third more uniform yarn" and "a reduction of 30% in eccentric motion" are typical of comments received wherever Dayco Rub Aprons and Condenser Tape are in use. These enthusiastic expressions are brought about by the greater coefficient of friction in Dayco Rub Aprons and their resistance to the abrasive action of constant rubbing that insures greater uniformity, more yarn per card.

Dayco Aprons give proper density to the yarn consistently, because the surface always remains the same—never changing, never slick. Nor will it absorb the color pigment of dyed wool, which might be ruinous if transferred to undyed yarn.

Dayco Aprons are not affected by changes in temperature or humidity, stand up for long service under constant flexing, are easy to adjust and "stay put" when installed thus lessening maintenance, speeding up condenser operations, and eliminating downtime. Because they stay the same the year 'round, you get faster starts after weekend shutdowns.

To avail yourself of all the money-saving advantages other mills are gaining from Dayco Rub Aprons, contact your Dayco representative right away. Or write direct to Dayton Rubber Co., Textile Division, 401 S. Carolina National Bank Bldg., Dept. 345, Greenville, S. C.



# Yarn Per Card!"

This handy, portable electric vulcanizer is available for emergency splicing of Dayco Condenser Tape right on the card.

**For Better Web Uniformity use Dayco Condenser Tape**

Dayco Condenser Tape, scientifically designed and processed from highest quality compounds, has no permanent stretch. More than that, Daycos fit the roller grooves so perfectly they prevent uneven splitting of the roving.

Static-free Dayco Tape has less tendency to turn over or twist in operation, too, which means less maintenance—less waste of costly time and labor. They're easier to keep clean, also, since they are completely unaffected by oil. Your Dayco representative will be glad to supply additional money-saving details on Dayco Condenser Tape.

© D.R. 1955

GOLDEN JUBILEE

Dayton Rubber 50 YEARS OF PROGRESS

**Dayco and Dayton Thorobred Textile Products for Better Spinning and Weaving**

**Dayton Rubber Co., Textile Division, 401 S. C. National Bank Bldg., Greenville, S. C.**

**for PRODUCTION . . .**

Speeds over 500 courses per minute on standard patterns and constructions.

**for CONTROL . . .**

Improved new yarn let-off and cloth take-up motions provide accurate control of cloth quality.

**for FLEXIBILITY . . .**

A far wider range of cloth patterns and qualities can now be produced.

**for SIMPLICITY . . .**

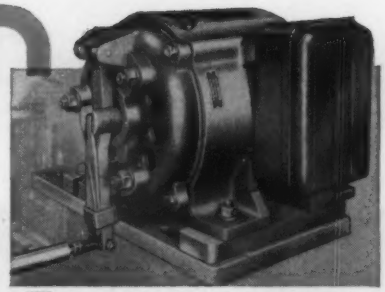
All parts are more accessible for services and all adjustments can be made simply and quickly.

**. . . for all 'round**

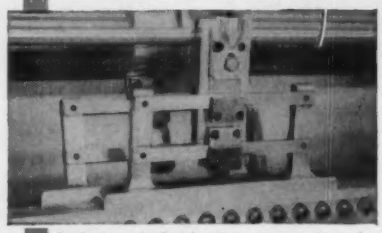
# Top Performance

**. . . it's the WHITIN**

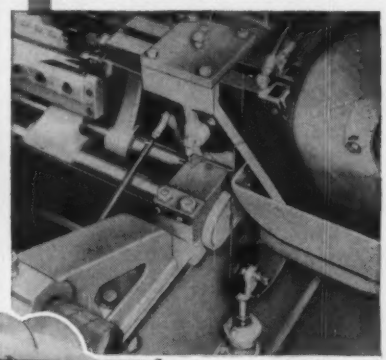
## MODEL "D" TRICOT KNITTER



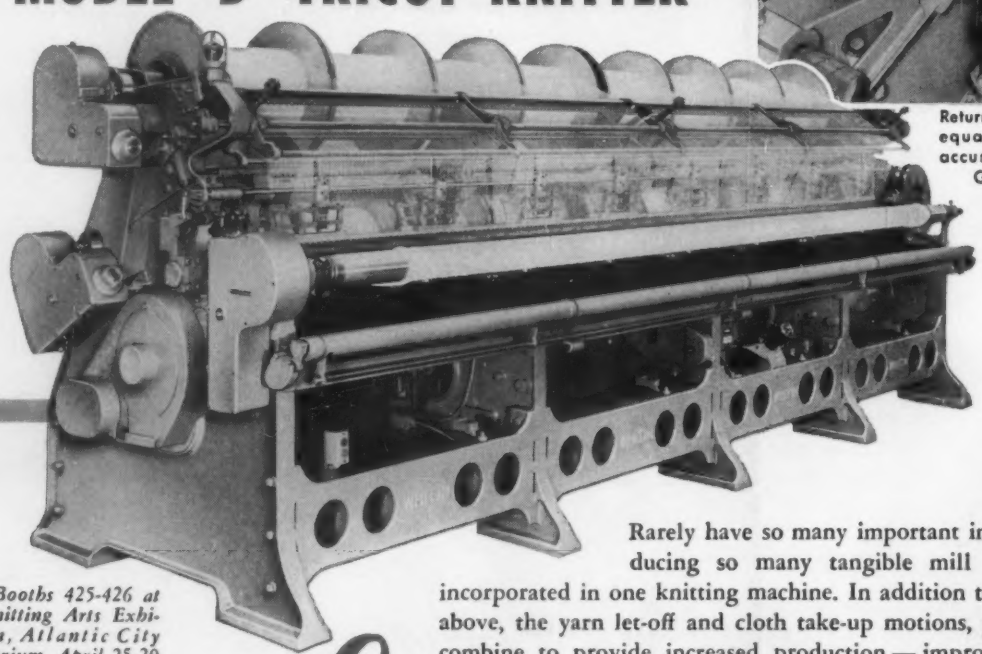
New Whitin Diehl Power Transmitter for instantaneous stop and start.



Redesigned Guide Bar suspensions for positive lock down position of front bar.



Return mechanism with equalizing spring for accurate control of Guide Bar motion.



*Visit Booths 425-426 at the Knitting Arts Exhibition, Atlantic City Auditorium, April 25-29*

Rarely have so many important improvements, producing so many tangible mill advantages, been incorporated in one knitting machine. In addition to those illustrated above, the yarn let-off and cloth take-up motions, plus many others, combine to provide increased production — improved cloth quality — and low operating and maintenance costs.

# Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

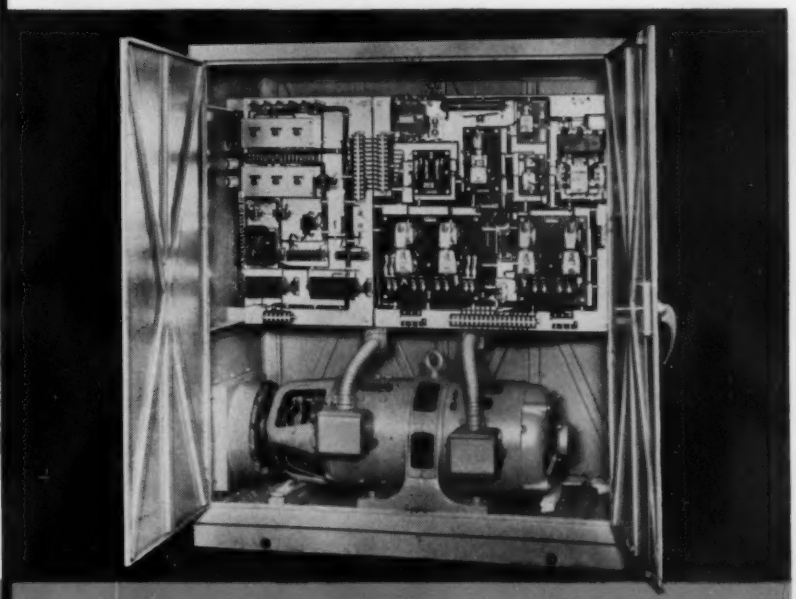
# The "Unseen Hand" at the Controls . . .

**AUTOMATICALLY SENSITIVE**

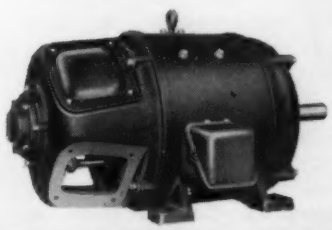
## Performance-Rated©

## Century SELECTIVE SPEED DRIVE

More accurately than the most experienced operator, Performance-Rated Century Selective Speed Drives *automatically* adjust motor speed to meet operating requirements. Speed changes are integrated with varying pressure, temperature, viscosity or size of the material being worked. You can also use Century Selective Speed Drives for starts, stops and jogs—forward or reverse—as required.



For full information and assistance on any motor drive application, AC or DC, call your nearest Century Sales Office . . . or write us direct.



©Performance-Rated
1/8 to 400 H. P.

**CENTURY ELECTRIC COMPANY**

1806 Pine St., St. Louis 3, Mo. • *Offices and Stock Points in Principal Cities*

# ARE YOU ONE OF THESE MILL EXECUTIVES . . . ?

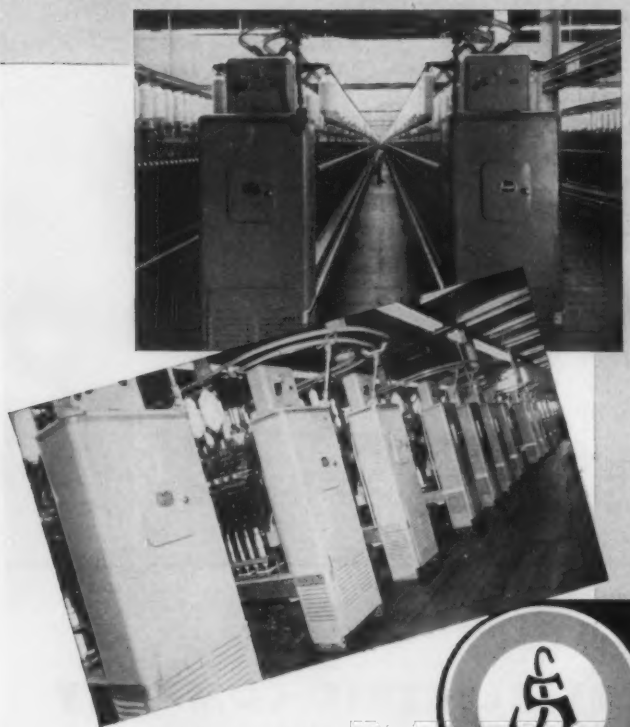
## SEEKING A WAY TO MAKE BETTER YARN AT LOWER COST

# SACO-LOWELL

**HAD THE ANSWER FOR OVER 60 MILLS — THEY HAVE IT FOR YOURS TOO!**

# GWALTNEY SPINNING

**MAKES YOUR YARN QUALITY EVEN BETTER — LOWERS YOUR COSTS, INCREASES YOUR PROFITS.**



Gwaltney Installation at Werthen Bag Corp.

The day of small rings, short bobbins and small package spinning is over — to meet competition it is essential that mills install equipment that will spin large packages and prepare filling by rewinding.

Saco-Lowell Gwaltney Spinning Frames are the answer to better quality and higher profits. The more than 60 mills with Gwaltney installations are now leading the way to new horizons profit-wise from this equipment — the only really new development in spinning machinery for over 100 years.

Gwaltney Spinning has a place in your mill — a Saco-Lowell engineer will be glad to give you full details and arrange for a demonstration. Call or write to your nearest Saco-Lowell Office.

**SACO-LOWELL**

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.

SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

A new blue freshness for fabrics...
Alcian Blue
Here is a truly exclusive color . . . only Arnold, Hoffman can offer you the completely unique advantages of exciting ALCIAN BLUE!
You can dye ALCIAN BLUE on cotton piece goods or yarn in packages and you can print this fabulous color on cottons . . . Ahco technical demonstrators are available to assist you in application techniques.
Send for a sample swatch of the one and only ALCIAN BLUE!
ARNOLD, HOFFMAN
PROVIDENCE • RHODE ISLAND
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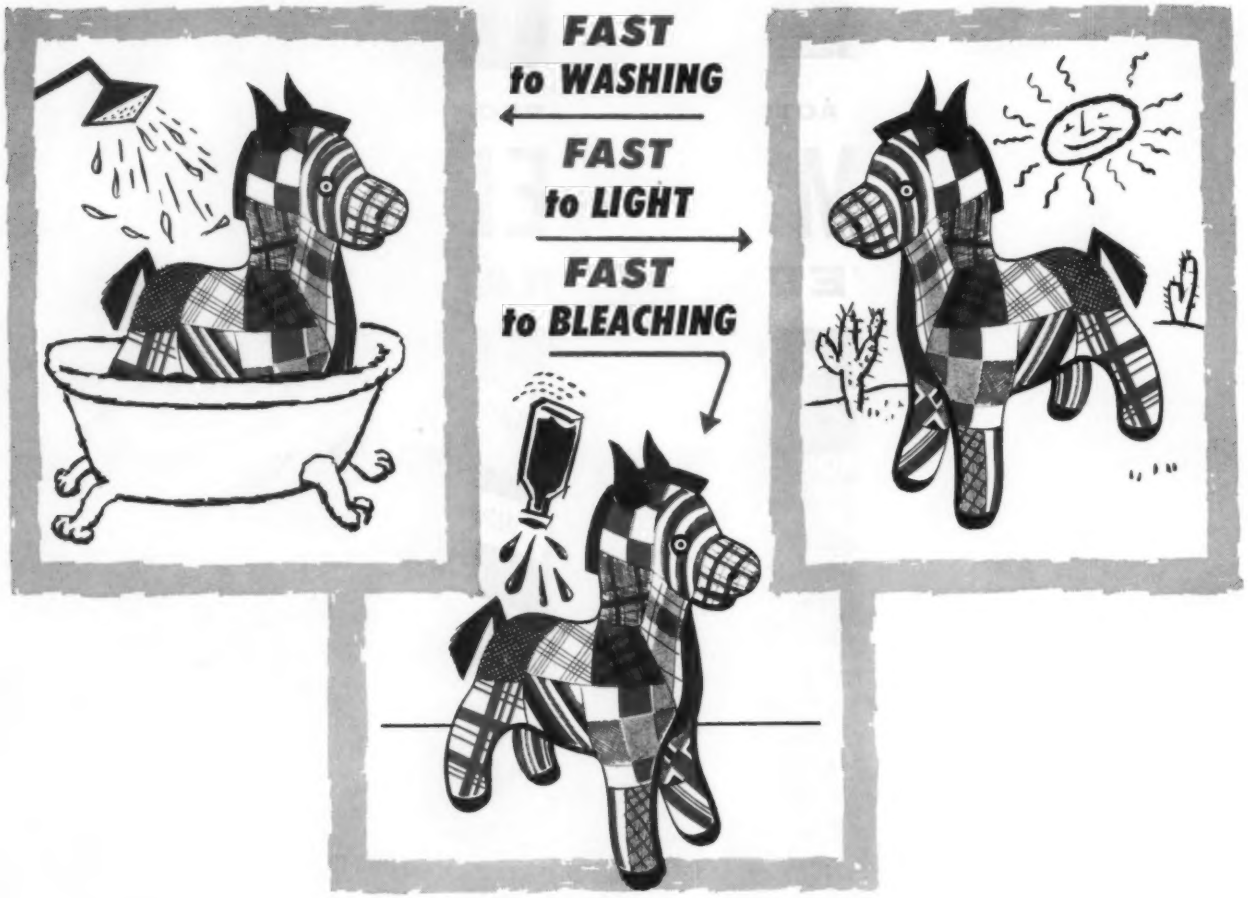
ARNOLD, HOFFMAN & CO., INCORPORATED • EST. 1815 • PROVIDENCE, R. I.
Offices and Sales Service Laboratories: Providence, R. I.
Atlanta, Ga., Charlotte, N. C., Teterboro, N. J.
AHCO DYES

# Franky

## the horse of another color

**Meet him at Knitting Arts Exhibition April 25-29, Booths 444 and 445**

# HE'S FAST...




## He's made with FRANKLIN PROCESS colored yarns

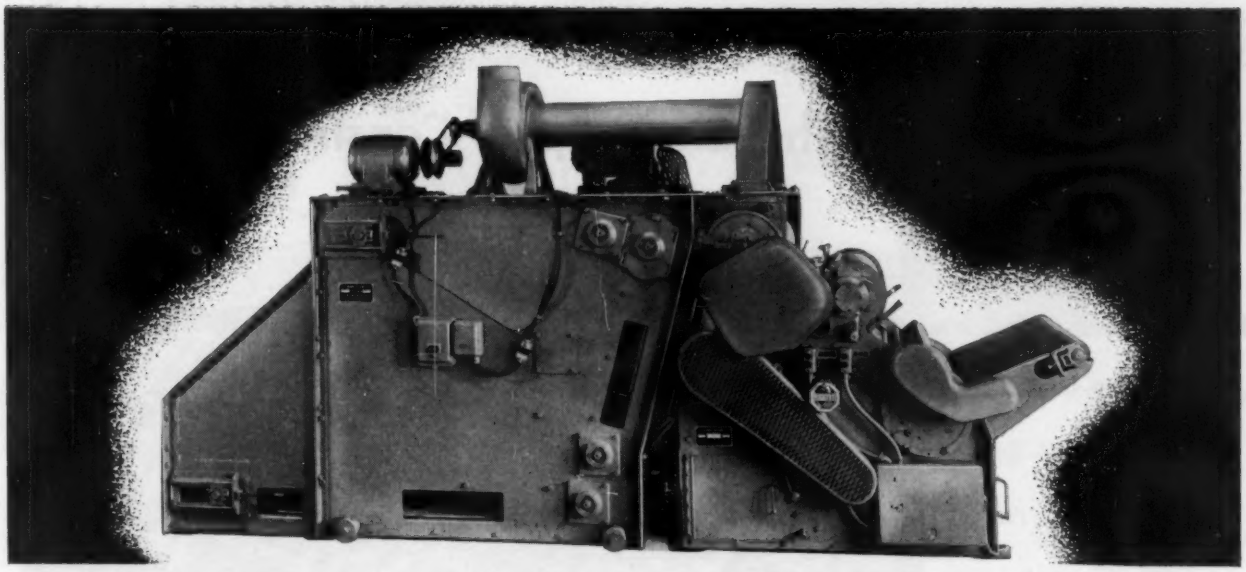
COTTON YARNS

Franklin Process

& CUSTOM YARN DYEING • LARGEST PACKAGE DYERS IN THE WORLD

Providence • Philadelphia • Chattanooga • Greenville • Fingerville, S. C.

*New York Representative* — 40 Worth Street



FOUR YEARS OF ACTUAL MILL PERFORMANCE DEVELOPED THE

# NEW, IMPROVED MODEL 40B

## RANDO-FEEDER

NEW — **ENLARGED HOPPER** . . . full 50-cubic foot capacity.

NEW — **FLOOR APRON** gives even pressure of fiber on elevating apron. Speed readily adjustable.

NEW — **STRIPPER APRON** returns excess fibers to rear of hopper. No Feeler Plate or Start-Stop actions.

NEW — **ROTARY CONDENSER SCREEN BOX.**

IMPROVED — **SELECTIVE OUTPUT CONTROL** . . . unaffected by wide range in hopper level.

NEW USES — **BLENDING AND BLENDING LINES.**

## RANDO-WEBBER

COMPLETELY NEW — **DESIGN AND CONSTRUCTION** . . . same principles and functions.

IMPROVED — **PERFORMANCE** . . . product and output efficiency.

IMPROVED — **MAINTENANCE** . . . heavier motors and drives—readily accessible.

NEW — **DOUBLE DRIVE ROTARY CONDENSER** . . . interchangeable with Feeder Condenser . . . minimum spares needed.

NEW — **AIR CHAMBER** design for improved web uniformity. Large accessible clean-outs.

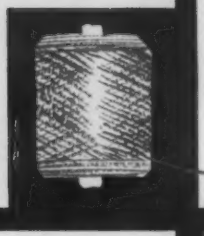
Rando-Feeders and Rando-Webbers have produced thousands of yards of random webs in around-the-clock production. Four years of proven performance. The same basic design today but new features . . . new versatility . . . improved performance. Available in 3 sizes: 40", 60" and 84". Inquiries are invited. Bulletin available.

TEXTILE DIVISION

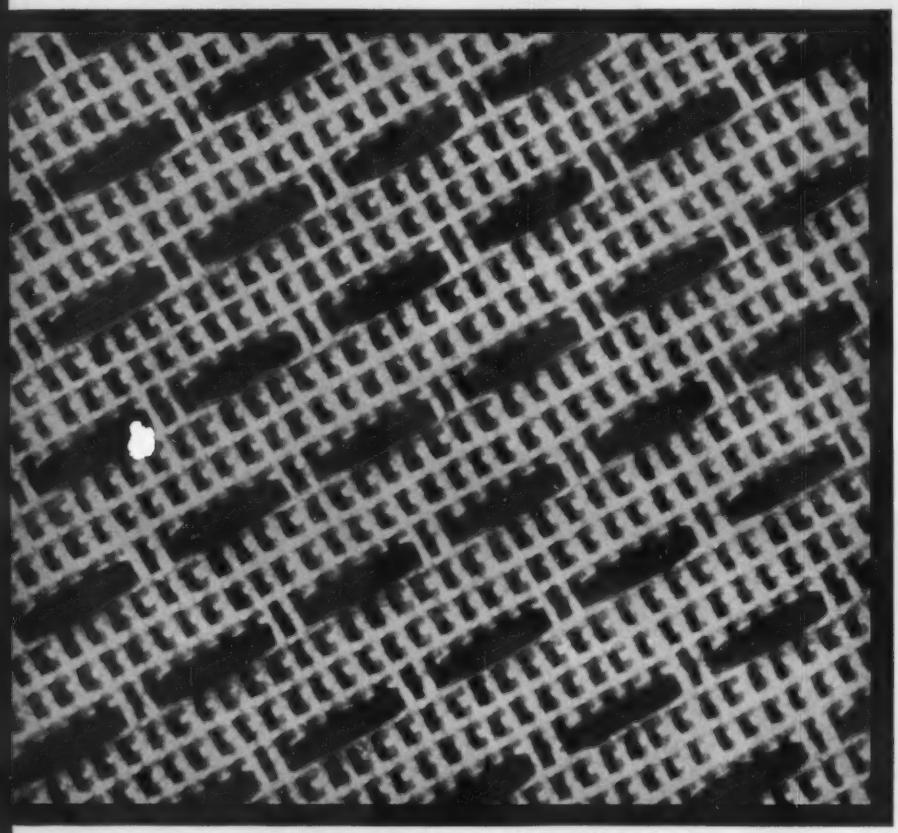
**CURLATOR**

CORPORATION

EAST ROCHESTER, NEW YORK



# The Close-up of Construction



An original fabric using B & C yarns magnified 100X.

**GUARANTEE**

*The Quality of Boger & Crawford Yarn is guaranteed — the highest tribute we can pay it!*
*Signed*

*Frederica Boger*

## The Yarn that makes Fine Fabrics

You get fine fabrics every time with BOGER & CRAWFORD Bleached Dyed and Mercerized yarns. That is because you get quality yarns.

Illustrated is an unretouched photograph of a new fabric made with B & C yarn. Judge for yourself the distinctiveness of the fabric. Note the appealing close-up of construction.

You are invited to write today for full advantages offered by B & C quality yarns.

## BOGER and CRAWFORD

**"K" and E. VENANGO STS., PHILADELPHIA 34, PA., U. S. A.**

**SPINNING PLANT— BOGER CITY, N. C.**

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New York 16, N. Y.

Morris R. Copeland & Sons
Box 5032, Chattanooga, Tenn.

Mr. Ian M. Haldane
P. O. Box 54, London, Canada



For more information, write direct or use Reader-Service post card.

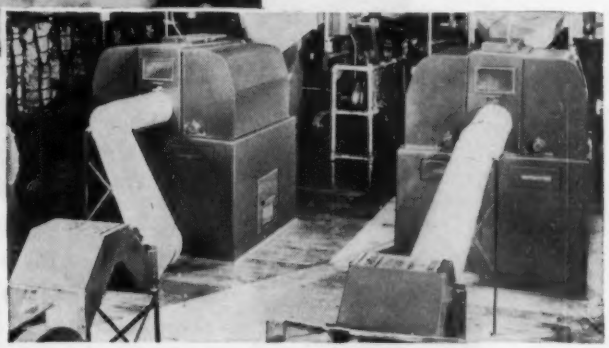
CALLED "THE MOST IMPORTANT DEVELOPMENT IN OPENING AND CLEANING IN TWENTY YEARS"

# The new WHITIN AXI-FEED and AXI-FLO

## are fast making conventional opening and cleaning methods obsolete!

*High speed photograph of interior of Whitin AXI-FLO showing cotton in process of being cleaned, further opened and blended. Note small size of tufts passing out through delivery pipe at rear.*

*Mill installation of two AXI-FLO units. Each is fed by a line of blending feeders.*



Providing a new technique in opening and cleaning, installations of the Whitin AXI-FEED attachment for blending feeders and the Whitin AXI-FLO are now setting performance standards higher than were ever possible with conventional equipment. In addition to Opening Room benefits, many other advantages are being realized in subsequent processes because of the improved quality of the cleaned stock.

- Better Opening
  **Stock opened into very small tufts**
- Increased Cleaning
  **Dirt removed equivalent to 2 or more conventional machines. Production up to 1200 lbs./hr.**
- Additional Blending
  **Axi-Flo blends while cleaning**
- Yarn and cloth quality usually improved
  **Preservation of long fibers beneficial**
  **Neps greatly reduced**
- Costs Sharply Reduced
  **Present power costs reduced by 60-75%**
  **Lower maintenance costs**
  **Low investment required**

*Send for full details today!*

Whitin

**MACHINE WORKS**

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA.
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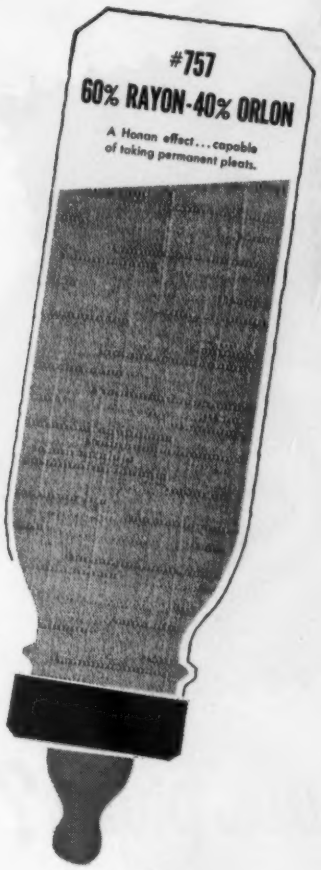
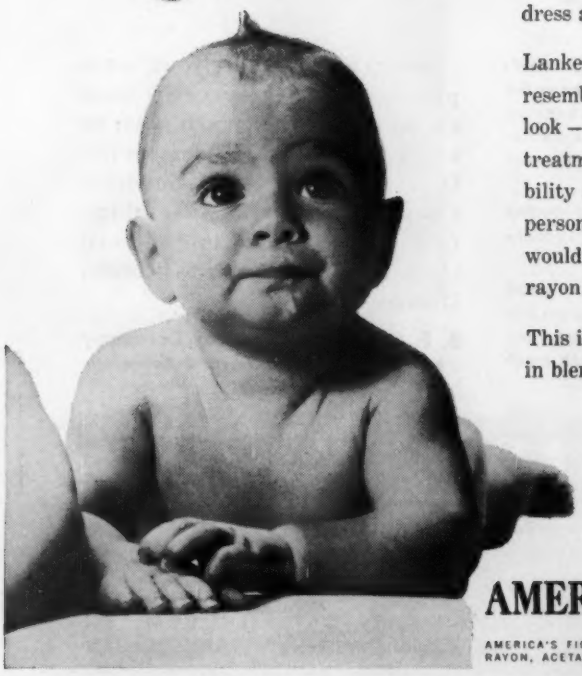
#740
78% RAYON-22% WOOL
The Kasha Cloth look at an appealing price.
#521
75% RAYON-25% DACRON
A crease-resistant fabric of superb quality.
#650
60% RAYON-40% ORLON
Wrinkle-resistant flannel, 14 light-to-deep colors.

# these new Lankenau "Quads" thrive on their RAYON-blend formula!



At Lankenau, the word "formula" is taken very literally. They tell us that their formula for fabric success is to enter each new season with the attitude: "What can we do this season in rayon blends?" Now, *there* is a formula!

This season, among the fruits of Lankenau's labors are the "Quads" you see here . . . 4 distinctive fabric blends that are already making their mark in the women's sportswear dress and skirt field, and in men's sport shirts and slacks.

Lankenau would like you to note that there is no family resemblance whatever among the "Quads". Each has its own look – each has a clearly individual texture and weave treatment. And Lankenau credits rayon's remarkable adaptability and versatility with creating these varied fabric personalities. In fact, they go so far as to say that these fabrics would never have seen the light of day without their rayon heritage.

This is one more confirmation of the textile world's feeling that in blends that make news... Avisco rayon makes the blend!

**AMERICAN VISCOSE CORPORATION**

AMERICA'S FIRST PRODUCER OF MAN-MADE FIBERS • 350 FIFTH AVENUE, NEW YORK 1, N. Y.
RAYON, ACETATE, VINYON,† FILATEX® †Inc. & CCC

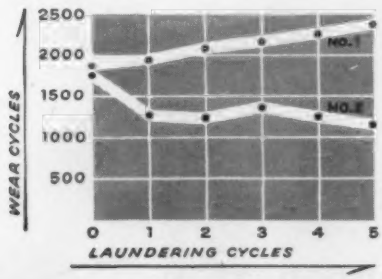

For more information, write direct or use Reader-Service post card.

*News about*

# B. F. Goodrich Chemical *raw materials*

## Which one will sell at a premium price?

DO you know that you can produce a denim which will wear 2 to 3 times as long, simply by using a Hycar *permanent* size? And that's the sort of benefit that commands a premium price at the retail counter. Check these Hycar advantages:




**LAUNDERING *INCREASES* ABRASION RESISTANCE** . . . The graph at lower left shows the effects of laundering on the abrasion resistance* of 11-ounce whiteback denim, warp-sized with (No. 1) Hycar latex and (No. 2) commercial starch.

**SUPERIOR HAND** . . . Hycar sized denims have a softer, more pleasing hand . . . maintain it through numerous washings.

**EXCELLENT COLORFASTNESS** . . . Hycar sized denims don't run or stain when they go into the washing machine with other fabrics. They resist fading, keep their new look much longer.

**HYCAR IMPROVES OTHER FABRICS** . . . Hycar latex, applied to cotton sheeting as an after-treatment, increases wear resistance up to 350%. Hycar latex blended with starch greatly increases the seam strength of rayons. Blended with U-F resins, Hycar upgrades rayon-acetate fabrics without loss of crease resistance.

*As shown by the Taber Abraser

You can upgrade your own production and enhance its sales appeal with Hycar latex. It's easy to use. To find out how, please write Department CM-2, B. F. Goodrich Chemical Company, Rose Bldg., Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

**B. F. Goodrich Chemical Company**
**A Division of The B. F. Goodrich Company**

**Hycar**
Reg. U. S. Pat. Off.
*American Latex*

**GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors**

# HUNTER *equipment safeguards quality at*

Pendleton®

**The Pendleton Woolen Mills assures its customers continuous high quality in its complete line of men's and women's sportswear, blankets and robes by using 100% Virgin Wool exclusively, and maintaining a careful control over every phase of production.**

**Wherever quality is so safely guarded, it's only natural to find Hunter equipment "on the job." Mills throughout the world prefer Hunter "plus production" equipment for the superior finishing of a wide variety of *synthetics, cottons, blends,* and *woolens.***

**The Hunter Cloth Carbonizing Range shown above is similar in many respects to the installation at Pendleton Mills. Hunter Carbonizing systems are used in mills throughout the world to achieve consistent high quality production.**

**plus production**

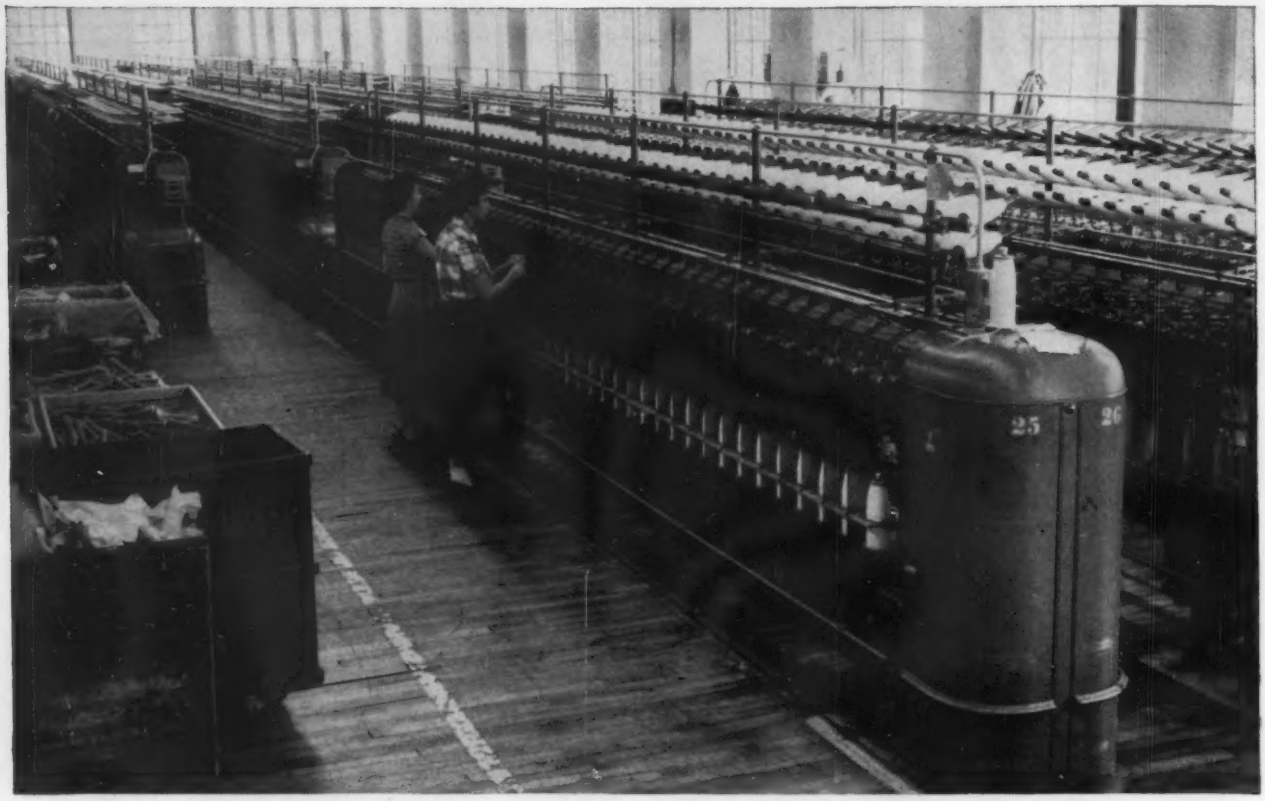
- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair... rapid parts delivery

# JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ... IT'S DEPENDABLE

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS.

NORTH ADAMS, MASSACHUSETTS FOUNDED 1847



**A Quality-Boosting Installation.** In the Thornton, R. I. mill of the Walter Marshall Spinning Corporation of Rhode Island, these Leesona Model 10 Ring Twisters have brought improved yarn quality and production efficiency. So much so that this mill is engaged in 100% replacement of twisting equipment with Model 10's.

# Worsted Yarn Mill Boosts Quality

***Walter Marshall Spinning Corporation tops its own high quality standards, realizes new economies with Leesona Model 10 Ring Twister***

For improved Worsted Yarn Twisting, the Walter Marshall Spinning Corporation installed Leesona Model 10 Ring Twisters as part of a modernization program. The resulting benefits were immediate and outstanding. Here is what the management at the Walter Marshall Mill has to say:

*"Primarily, we were interested in getting highest possible yarn quality when we replaced our obsolete equipment with Leesona Model 10 Ring Twisters. We got that top quality in full measure.*

*"Such features as automatic stop motion, free delivery, constant yarn speed delivered by accurate feed rolls and tensioning are real quality boosters. So is the endless belt drive, which produces even yarn on all spindles."*

**In your own operations**

modernizing with Leesona twisting or winding machines is the logical way to make your machine replacement be a real time and money saver, while improving quality. For further facts on the Model 10 Ring Twister, or on any other Leesona machine, see your Universal representative.

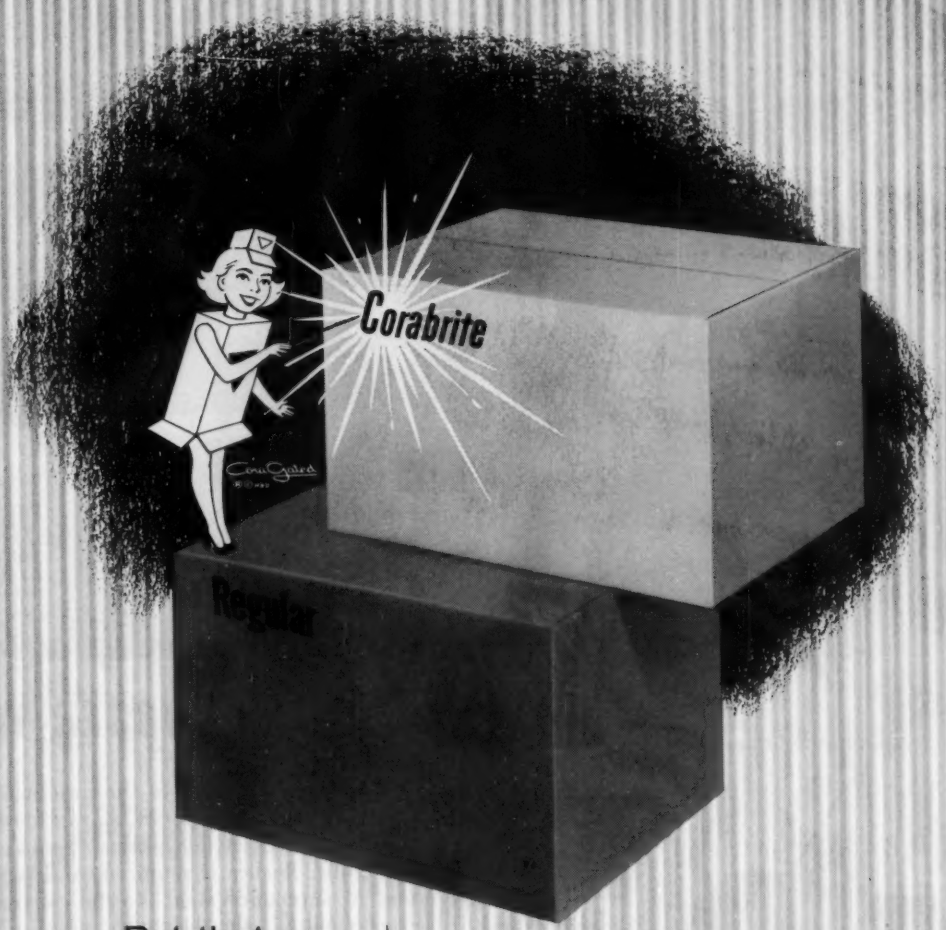
23.4.9

**UNIVERSAL WINDING COMPANY**

P. O. BOX 1605, PROVIDENCE 1, R. I.

*Sales Offices:* Boston • Philadelphia • Utica • Charlotte • Atlanta • Los Angeles

*Winding and Twisting Machinery for Natural and Synthetic Yarns*




Put that

**Corabrite** sparkle

in your corrugated box!

**Corabrite—H & D's new corrugated board—is several shades brighter than ordinary corrugated board—and smoother, too (you can feel the difference). And, it's uniform in both respects.**

**Result: You get a cleaner-looking box . . . more color contrast . . . and a consistently better printing job. Even so, Corabrite won't cost you a penny more than ordinary corrugated board. And that's worth talking about. Let's do.**

**HINDE & DAUCH**

AUTHORITY ON PACKAGING • SANDUSKY, OHIO
12 FACTORIES • 40 SALES OFFICES



For more information, write direct or use Reader-Service post card.

# Let's not clean away dollars and man-hours with costly, inadequate floor care

## MECHANIZE *your floor-cleaning with a* COMBINATION SCRUBBER-VAC!

Wherever *combination-machine-scrubbing* is the practical solution to the floor-cleaning problem, any lesser, slower method is wasteful of money and manpower. A *Combination Scrubber-Vac* applies the cleanser, scrubs, flushes if required, and picks up —*all in one operation!* Maintenance men like the convenience of working with this single unit . . . the thoroughness with which it cleans . . . and the features that make the machine simple to operate. It's *self-propelled*, and has a *positive* clutch. There are no switches to set for *fast* or *slow*—slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs quietly. Cable reel is self-winding. *Model 213P Scrubber-Vac* at left, for heavy duty scrubbing of large-area floors, has a 26-inch brush spread, and cleans up to 8,750 sq. ft. per hour! (Powder Dispenser and Level Cable Wind are optional.)

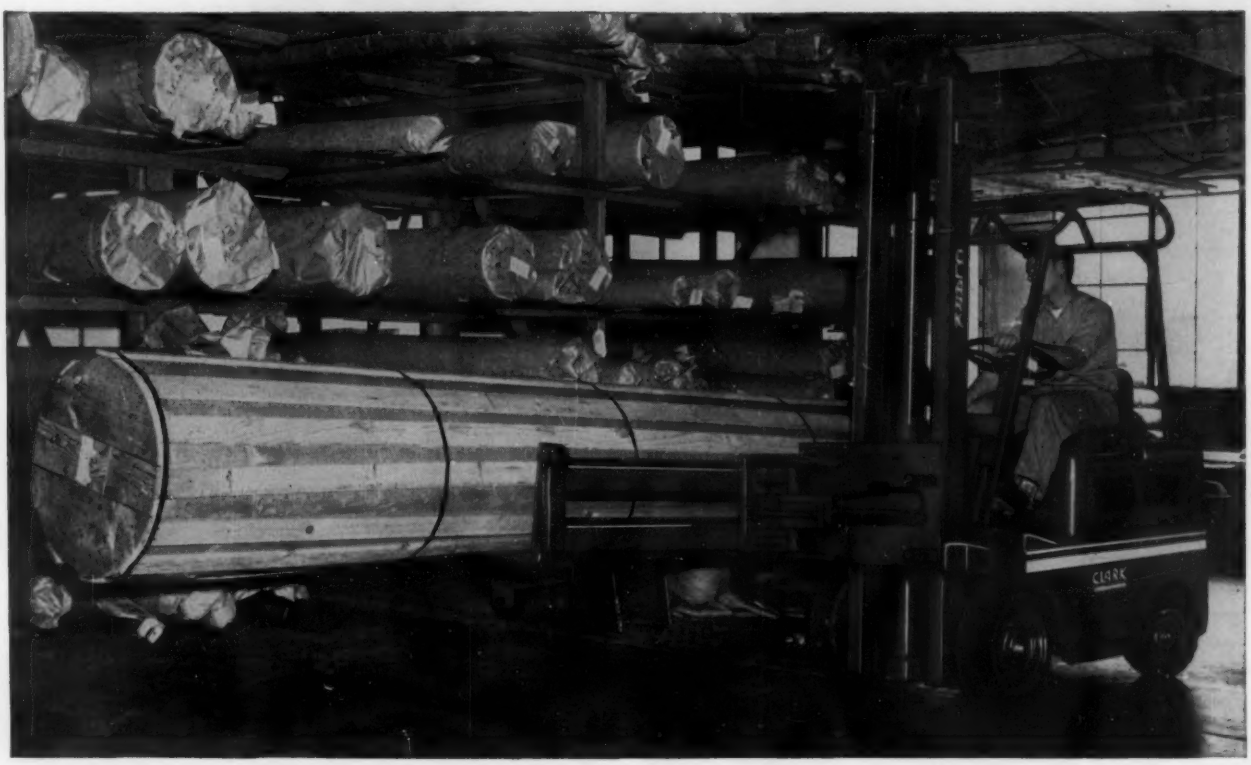
*Finnell* makes *Scrubber-Vac Machines* in a full range of sizes—for small, vast, and intermediate operations. From this complete line, you can choose the size that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that you can lease or purchase a *Scrubber-Vac*, and that *a Finnell floor specialist and engineer is nearby* to help train your maintenance operators in the proper use of the machine . . . to recommend cleaning schedules for most effectual care . . . and to make periodic check-ups. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1904 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

**FINNELL SYSTEM, Inc.**

*Originators of Power Scrubbing and Polishing Machines*

Everything FINNELL for Floor Care

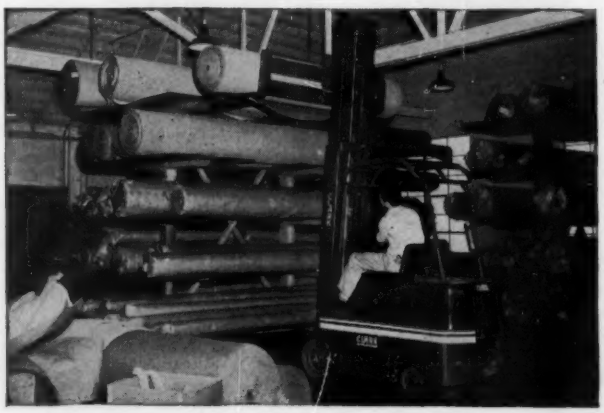
BRANCHES IN ALL PRINCIPAL CITIES



# How to handle 18 foot loads in a 7 foot aisle

Here's an answer on how to handle over-sized loads in narrow aisles. Oregon Flax Textiles of Salem, Oregon found a solution (saved money, too) with a pivoted fork bar on a Clark Carloader. Here's How:

Finished carpeting, in rolls 18 ft. long and weighing as much as 1500 lbs., is lifted by the Clark truck and swings 90° into a horizontal position alongside the operator. With the roll to the side of his truck, the driver can easily negotiate the 7 ft. aisles.



**Unique way to store long rolls**

Racks are mounted on rollers and are easily pulled out so that fork truck can load or unload any specific roll or rolls. Easily accessible, high storage now possible.

The operation of the pivoted fork bar is completely hydraulic, and can quickly be adjusted to any angle within the 90° arc. On tight corners, the driver merely adjusts the load-swing for clearance with simple controls mounted under his right hand. Within the limits of truck capacity, over-sized material is no longer a problem.

Iron out *your* special handling problems, too. No job too big—too difficult for versatile Clark equipment. Get full details on this operation! Write for Clark Application History 16-D-22, or call your local Clark dealer, in the Yellow Pages under "Trucks, Industrial".

Industrial Truck Division
**CLARK EQUIPMENT COMPANY**
Battle Creek 27, Michigan

**CLARK EQUIPMENT**

# "Dated" instruments drain away dollars

Instruments can become outmoded . . . just like automobiles and ideas. Progressive instrument development is constantly making many older designs obsolete . . . and such obsolescence can be a steady drain on profits.

### Modern instruments save money

Honeywell engineers are proving this fact every day—in a growing number of plants, on all types of processes. Where out-of-date controls have been replaced by modern Honeywell instrumentation, economy-minded engineers and management men have really opened their eyes. And with good reason, for—

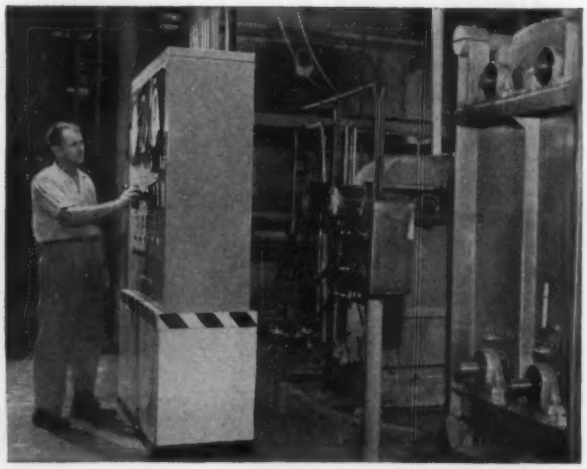
- Modern Honeywell instrumentation saves labor. Centralized control, automatic time-cycle systems, and other recent control concepts save countless wasted steps . . . reduce routine man-hour expenditures.
- Modern Honeywell instrumentation cuts maintenance costs. It affords longer, uninterrupted operation . . . is designed for easy service . . . requires minimum attention.
- Modern Honeywell instrumentation reduces rejects. It maintains the tighter process tolerances demanded by today's more exacting specifications.
- Modern Honeywell instrumentation improves product quality. Precision measurement and control remove any chance of error or guesswork in critical processes.
- Modern Honeywell instrumentation makes cost accounting more accurate than ever before. Everything is a matter of record.

### An investment that really pays off

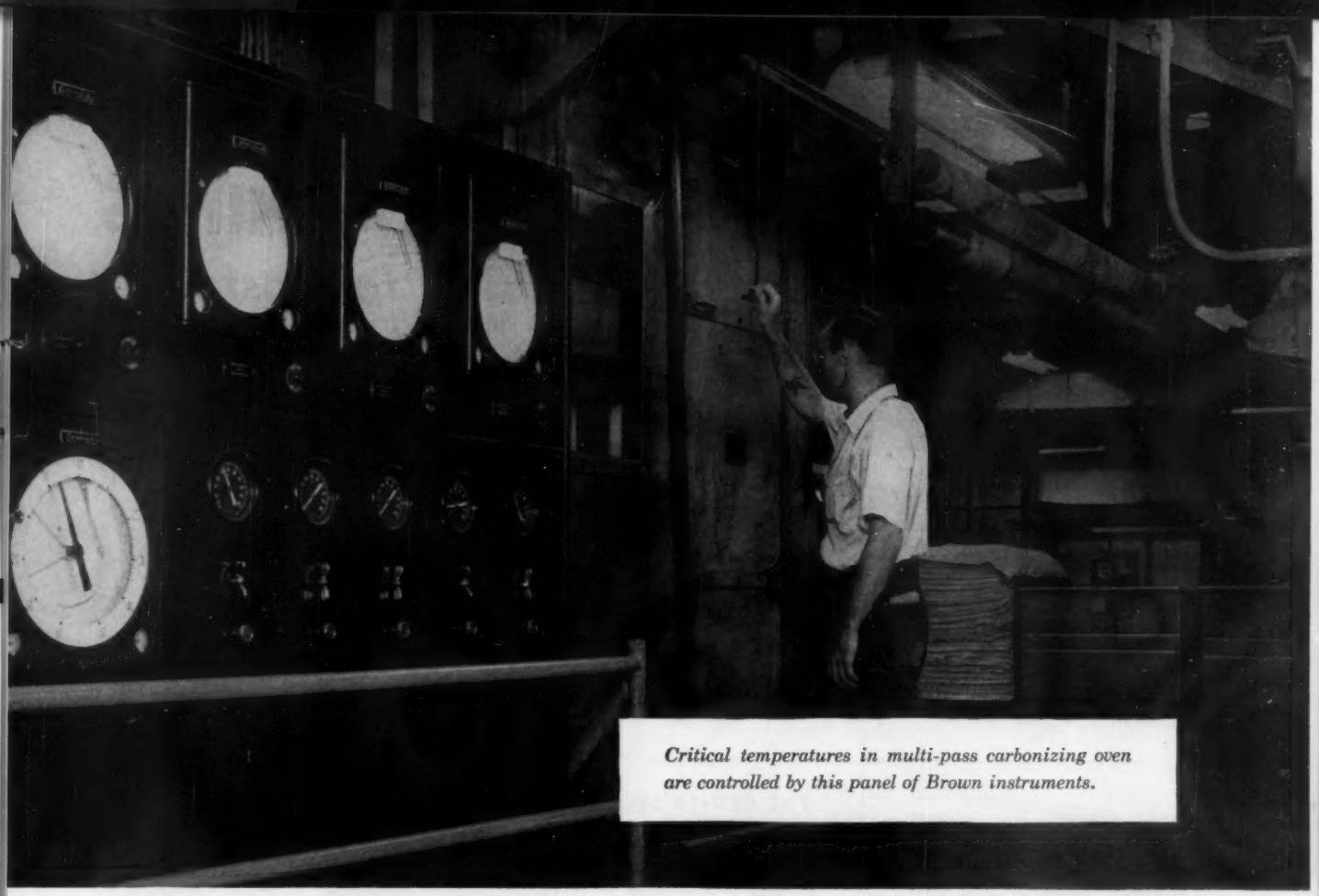
Just being "instrumented" is not enough. You can get more out of your instrument dollar, from both a product and service stand point, with Honeywell instrumentation...the ultimate in engineering and design . . . insurance for your equipment investment.

Replacing with Honeywell is one of the best ways to invest your modernization appropriation. A Honeywell application engineer will gladly survey your present plant instrumentation . . . give you a practical recommendation that will make dollars and sense. Give him a call . . . he's as near as your phone.

# Modernized control boosts efficiency of your mill's



*Brown instrument cubicle centralizes control of washer, saturator and J-box in this bleachery.*



*Critical temperatures in multi-pass carbonizing oven are controlled by this panel of Brown instruments.*

# bleaching and drying processes

ONE of the most profitable ways to invest in modernization in your mill is to install up-to-date Brown instruments for controlling critical processes.

Wherever you use heat for drying, for example, Brown temperature control instrumentation can pay dividends in several ways. In loop dryers, stock dryers, tenter housing, curing ovens and calender stacks, more accurate control of temperature saves steam, fuel or electricity . . . eliminates fabric defects . . . safeguards quality.

Similarly, your bleach range offers opportunities for substantial economies through improved, automatic control: Brown instrumentation simplifies the coordination of vital variables in J-boxes, washers, saturators to make possible the best bleaching results at the most economical rate.

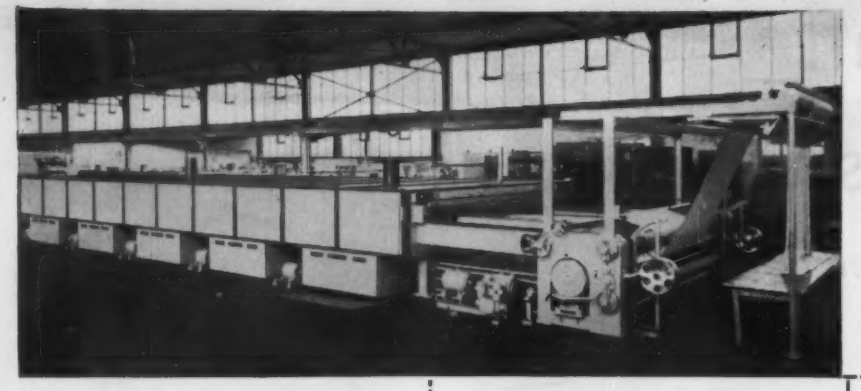
The extensive line of Brown instruments encompasses an unequalled selection of sensing elements, instrument models and control systems covering literally any requirements for textile process control. To utilize these modern controls most effectively, the experience which Brown specialists have gained in many years of experience in the textile field stands ready to serve you. Complete, integrated systems are engineered to the individual requirements of your mill and your processing equipment.

For a discussion of ways your mill can modernize for greater efficiency with today's control techniques, call your local Honeywell sales engineer. He's as near to you as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.

● **REFERENCE DATA: Write for Composite Catalog No. 5002, and for Data Sheets on specific Textile Processing Applications.**

MINNEAPOLIS
**Honeywell**
BROWN INSTRUMENTS
*First in Controls*

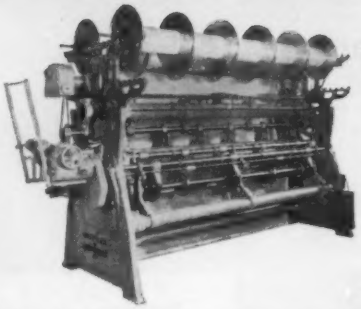


# REINER MACHINES

## *for Faster, Lower-Cost Production*

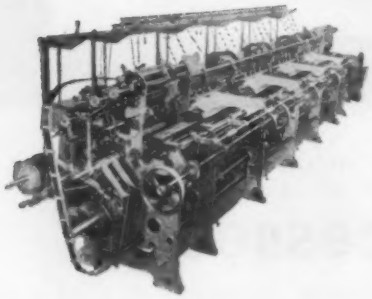
### THE FAMATEX TENTERING MACHINE

Suitable for all kinds of fabrics. It is unique in that it combines tentering, drying, cooling and conditioning. Fabric quality is incomparably higher than that produced by formerly used tentering and drying machines. This unit is a product of the world famous FAMATEX GMBH in Western Germany.



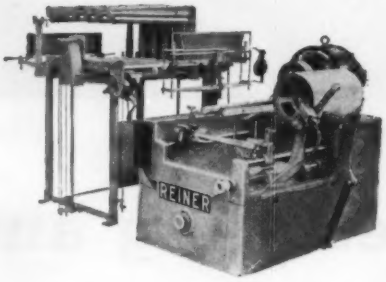
### THE REINER RASCHEL MACHINE

Up to 5 guide bars and up to 56 gauge—particularly suitable for elastic power nets, tulles or coarser goods such as shoe tops, draperies, etc. . . . Sturdy construction permits higher Raschel speeds. One or two needle bars. Reiner are the oldest American Raschel machinery makers.



### THE REINER SECTIONAL WARPERS

are leaders in their field. They are available in lengths up to 84" and their many features assure highest grade warps at top speeds with automatic devices for rugged, trouble-free operation. They are perfect teammates for Reiner Creels, and can be found in many mills here and abroad. Readily usable with any make of creel.




### The Reiner Full Fashioned SWEATER MACHINE

The first American-built machine of its kind. It is fully automatic and faster than any of the converted types available.

It is offered in all popular sweater gauges—knitting width 28" and 32"—features automatic V-neck attachment—automatic fashioning control—constant carrier lead—single coulier-ing, etc. . . . rugged construction—highest speeds.

### THE SCHAFFHOUSE FLAT POWER MACHINE

The Schaffhouse fully automatic flat power machine designed expressly for collars and trimmings for full-fashioned as well as cut and sewn garments. A fast, versatile, efficient and durable unit of world renown. Up to 20 needles per inch—up to 60" width. Unique features throughout.

***Visit us at Booth Nos. 66 to 73 inclusive,***
***KNITTING ARTS EXHIBITION, Atlantic City, N. J., April 25 to 29.***

**ROBERT REINER INCORPORATED**

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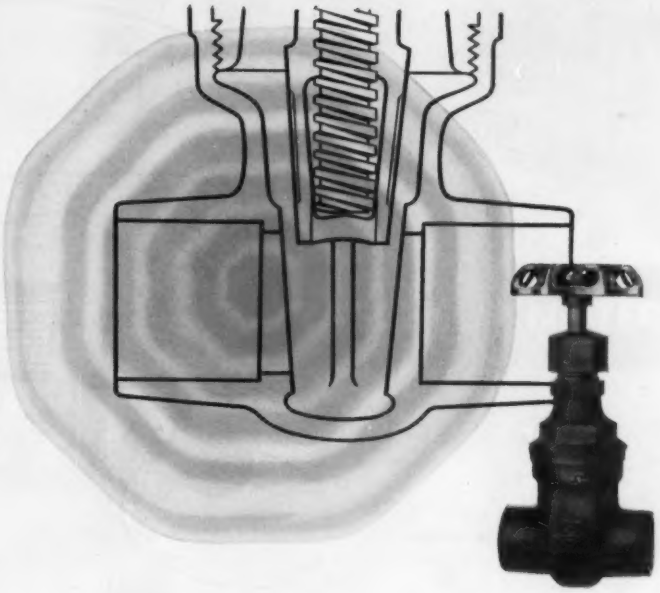
# When the heat's on

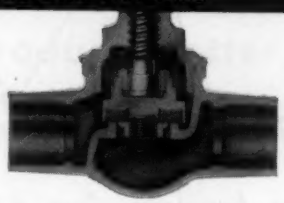
## you need the extra strength of JENKINS Solder and Socket End VALVES



**Solder End GLOBES and ANGLES**

**300 lbs. O.W.G.**
**¼" to 3"**

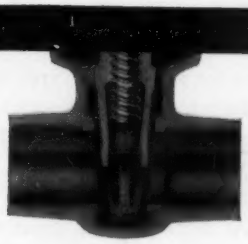
Fitted with Renewable Composition Disc.



**Solder End GATES**

**225 lb. and 300 lb. O.W.G.**
**⅜" to 3"**

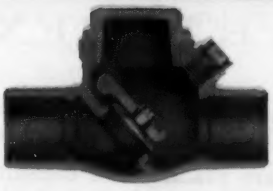
With solid or split wedges, and stationary or traveling spindles.



**Solder End CHECKS**

**300 lbs. O.W.G.**
**¼" to 3"**

Regrinding. May be easily reground without removal from line.



The "light-duty" look of copper tubing installations is deceiving. Valves must provide an accurate fit to tubing and *hold it* under the intense heat of soldering. And, because flexible tubing does not afford the rigid support of standard pipe, valves must withstand unusual strains in operation.

Jenkins Solder End Valves are engineered to meet these demands with strength to spare. High tensile bronze castings have liberal dimensions for extra rigidity. Smooth, clean bores assure accurate fit, easy soldering, positive seal to types K, L, and M Copper Tubing.

For faster, trouble-free installation, and lasting economy, specify Jenkins Solder End Valves. Jenkins Bros., 100 Park Ave., New York 17.

**JENKINS Socket End Valves**

**for Class B or IPS Tubing**

Jenkins bronze valves with socket ends for silver-brazing are made in Globe, Gate, and Swing Check patterns to control compressed air, hot oil, and similar fluids in tubing hookups where specifications call for permanent, leakproof joints. Complete information in the Bulletin offered below.

**NEW BULLETIN** Lists all Jenkins Solder End and Socket End Valves and gives complete instructions for soldering and brazing. Ask for Solder-Socket End booklet.

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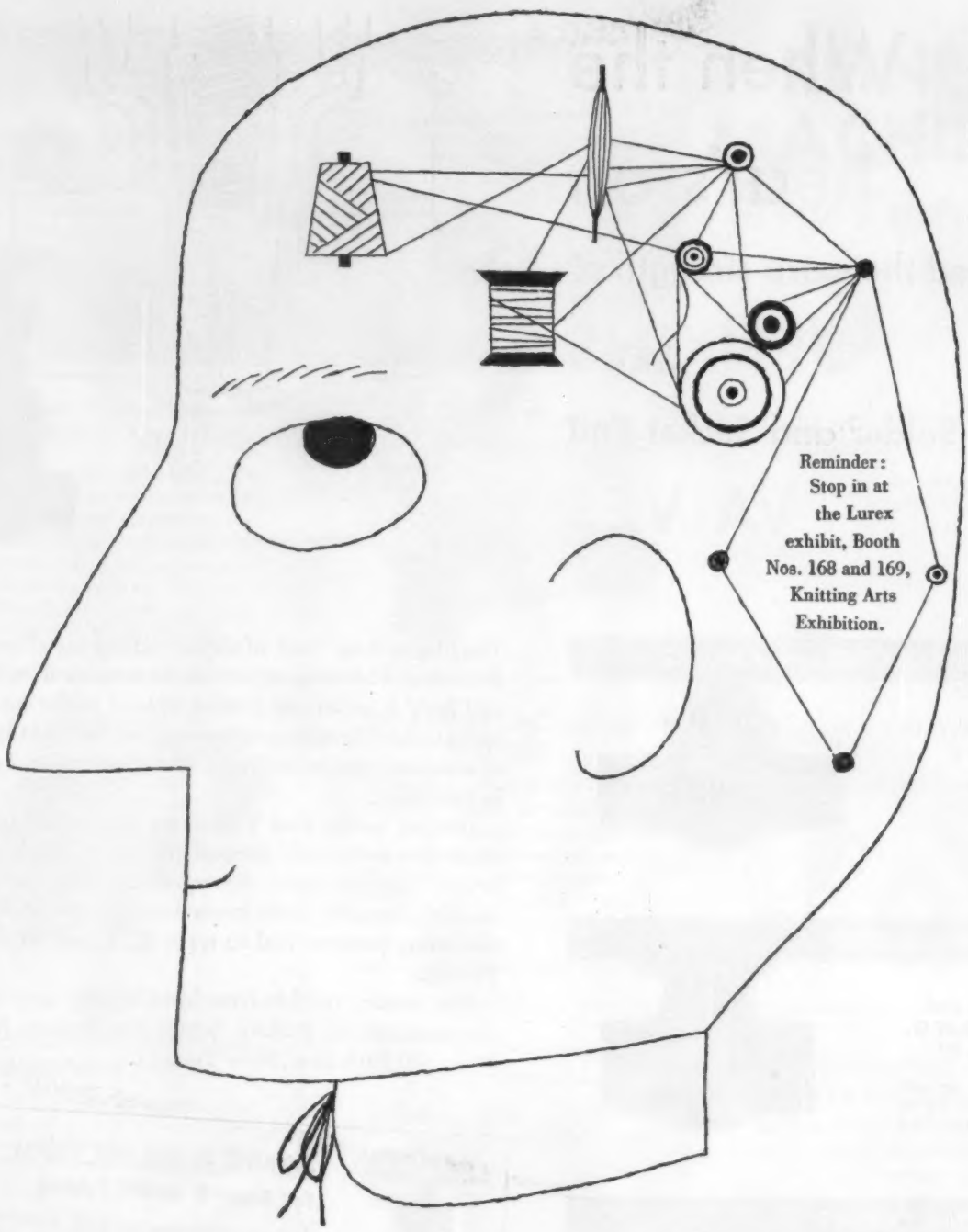
For more information, write direct or use Reader-Service post card.

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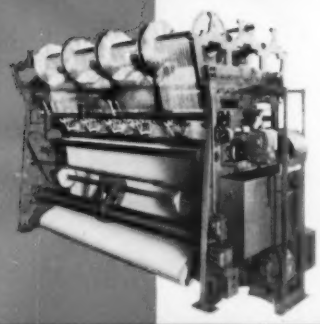
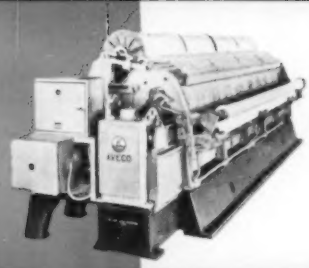
# Kidde



RASCHEL KNITTERS

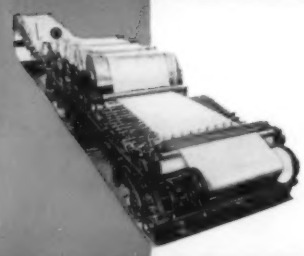


TRICOT KNITTERS

## Produce better fabric faster . . . with the world's most advanced machines

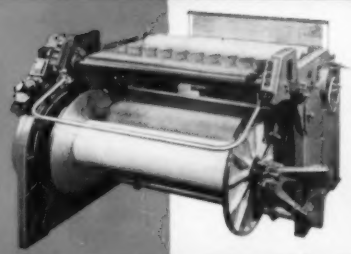
Here is a line of machines that you can run in continuous three-shift operation at peak speeds . . . *without unexpected interruptions for repairs.* Kidde knitting machines have always operated at speeds equal to or higher than competitive machines. More important, Kidde machines convert these high speeds into marked production increases. This is because they are built to run fast with next-to-no down time.

The same is true of the Kidde-Johnson slasher, and Kidde-Sipp warpers and creels. All this equipment offers special operating advantages that make it the most advanced textile machinery in the world. But above all, it is the built-in ability to keep running smoothly on exacting production schedules that . . . in less than ten years . . . has made Kidde machines the first choice of the world's leading textile producers.



SLASHERS

CREELS



WARPERS

**KIDDE MANUFACTURING CO., INC.**
42 Farrand Street, Bloomfield, New Jersey

# Kidde-KNITTER

**RASCHEL TYPE**

# KNITTING MACHINE

The Kidde Knitter is the most widely used Raschel type machine in the world. It knits elastic fabric for corsets and girdles, tulle and various types of net, lace and lace edgings, shoe cloth, laundry nets, sport shirtings, carpeting and many specialties.

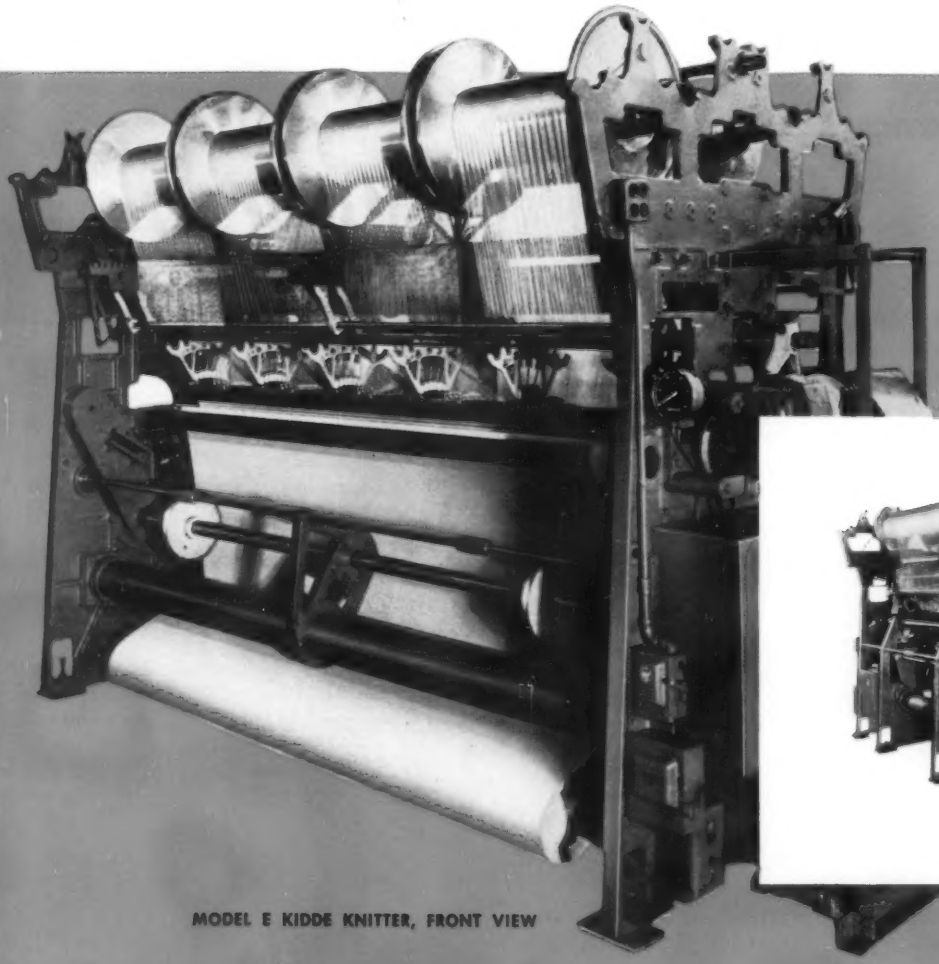
**It's fast.** Many mills run their Model E Kidde Knitters at 500 courses per minute or faster on two guide bar fabrics and 400 courses or better on elastic with four bars. This new machine produces more than 50% more fabric per hour than earlier models.

**It's versatile.** Today, the Model E can be equipped with from two to six guide bars, and will be available with up to fourteen in the near future. Its range of gauges will produce anything from the sheerest tulle to coarse carpet fabric. And special attachments make it even more versatile. A sinker bar produces tighter stitches and eliminates selvage troubles. A power let-off attachment for controlling rubber beams improves quality of elastic fabrics. A power yarn feed assures uniform quality at high speeds and permits the use of large warps.

Standard width is 100 inches; machines can be made wider on order. They can be equipped with 14-inch or 21-inch diameter sectional spools or with beam flanges for full width warping. Pattern wheels or pattern drum and chain links are optional with the purchaser.

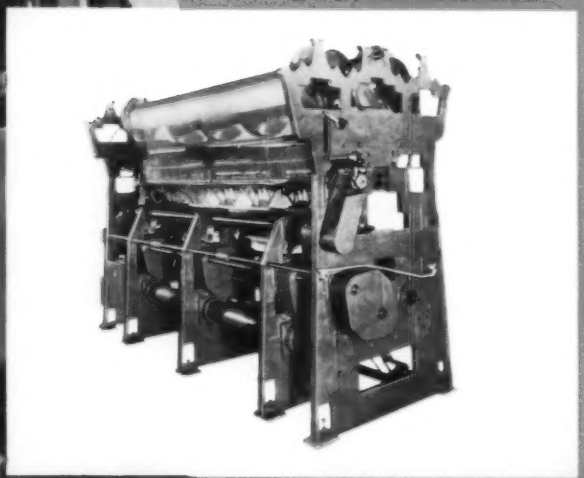
**It's sturdy.** Besides its two end frames, the Model E Kidde Knitter rests on three intermediate frames that provide solid support for the needle mechanism and guide bars. Guide bar swing is actuated by sets of cams at each end of the machine. All cams are totally enclosed and run in oil baths.

**It's compact.** Length: 140 inches. Height: approximately 90 inches. Width: approximately 65 inches. Weight varies from 7200 pounds to 9000 pounds, depending on equipment.



MODEL E KIDDE KNITTER, FRONT VIEW

- SPEEDS OF 500 COURSES PER MINUTE OR BETTER
- TWO TO SIX GUIDE BARS
- 100-INCH KNITTING WIDTH (OR WIDER)
- EASY AND QUICK TO SET UP OR CHANGE OVER



REAR VIEW

- 600-COURSE SPEEDS
- MODELS FOR 2-BAR AND 3-BAR FABRICS
- HEAVY, RIGID CONSTRUCTION

KIDDE-AVECO TRICOT MACHINE

# Kidde-AVECO

***HIGH SPEED***

# TRICOT MACHINES

Two models of the Kidde-Aveco tricot machine—the Model E high-speed 2-bar machine and the new Model F convertible 3-bar machine—provide a range of speeds and adaptability to handle all types of tricot fabrics.

**High knitting speeds.** The Model E 2-bar machine is currently producing at speeds of 600 courses and better. The Model F convertible will do 500 courses when fitted with two guide bars, and can be run over 400 courses per minute on 3-bar fabrics.

Knitting width is 168 inches. Machines are available in 28 or 32 gauge with butted or leaded needles, and can be equipped for either 14-inch or 21-inch diameter sectional spools. High starting torque motor and "quick stop" provide fast acceleration and deceleration to reduce stop marks.

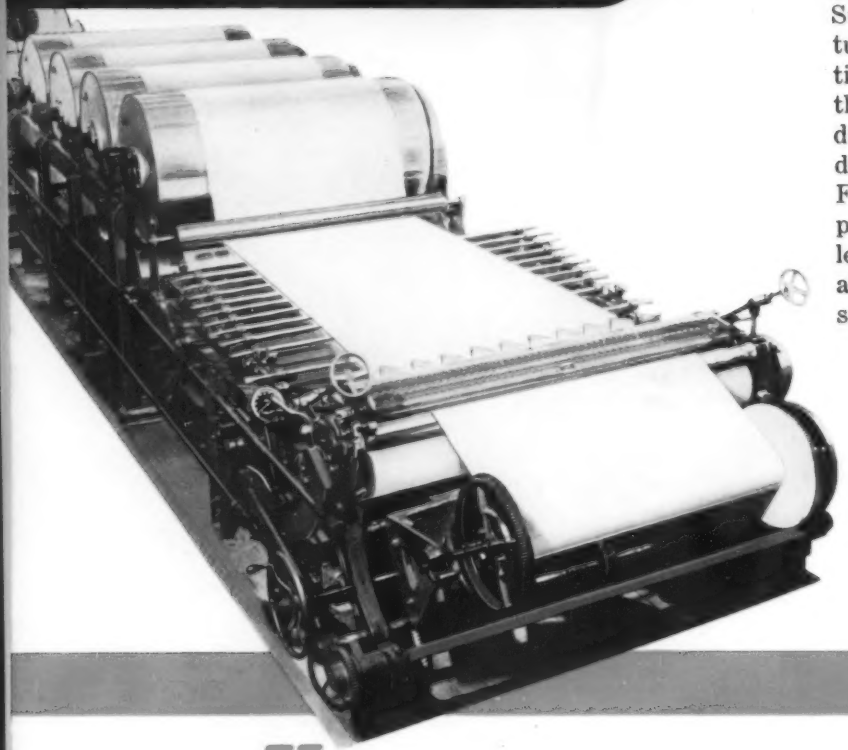
**Easy change-over with convertible machine.** The Model F can be changed from 2-bar to 3-bar operation without changing cams. Pattern drum drive with chain links is standard on the Model F, while pattern wheel drive is supplied on the Model E. Both models can be ordered with either type of drive, however. All cams are oversized for maximum resistance to wear, and operate immersed in oil.

**Ruggedly built for trouble-free service.** Both models of the Kidde-Aveco tricot machine are built with solid rigidity. Heavy base provides a firm foundation. One-piece cast girder maintains machine alignment. Each model weighs approximately 12,000 pounds.

**Dimensions.** Length: 19 feet 2 inches. Width: 5 feet 5 inches. Height: 5 feet 11 inches.

# Kidde-JOHNSON

## WARP SIZER



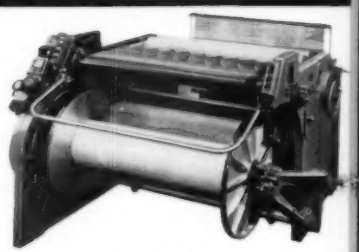
Famous for dependable, around-the-clock operation without breakdowns, Kidde-Johnson slashers give you precise control of size temperature, drying heats, speeds and stretch. Superpress quetsch provides uniform moisture extraction: there's absolutely no variation in the amount of size from one end of the warp to the other, no streaks from uneven drying. Visual stretch indicator reveals the degree of stretch as the warp passes through. Fingertip controls regulate stretch, making possible even stretch through the entire length of the warp or series of warps. Available with 5, 7, 9 or more cylinders for either silk or cotton system warping or combinations of both. Stainless steel size box, immersion, quetsch and idler rolls, and cylinders. Adjustable width beam carriages.

# Kidde-SIPP PREPARATORY MACHINERY

### Magazine warping creel

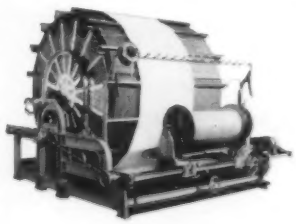
Any number of ends you need, magazine or nonmagazine, yarn delivery from the inside or outside: there are no limits to the variations available to you with Kidde-Sipp creels. Package holders take cones, spools, tubes or pirns. Tensions available include washer type, revolving pulley type, or the Kidde Tension Compensator. All have built-in stop motion.

### High-speed cotton system warper



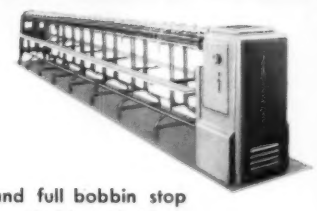
This heavy-duty warper will handle beams with flanges up to 36 inches in diameter. Hydraulic brakes on the beam and on the pressure and measuring rolls assure smooth, quick stops. Constant yarn speeds up to 900 YPM, with infinite variation through the entire range. Separate hydraulic system handles the beam in and out of the warper. Push buttons simplify operation.

### High-speed horizontal warper



Warping speeds up to 500 YPM and beaming speeds up to 64 RPM provide the capacity you need combined with flexibility. Rigid construction. Metal reel, cast iron frame. Can be supplied with electric drive or heavy-duty clutch type drive. Available with 83-inch, 93-inch or 101-inch reel widths. Handles loom beams with flanges up to 28 inches in diameter.

### High-speed winder-redraw



This Kidde-Sipp machine provides high speeds with quick, easy loading and doffing: a flip of the hand doffs a full bobbin. Inserting empty bobbin takes only one hand. Winds from pirns, cakes, cheeses and skeins. Self-threading Alsimag thread guides and full bobbin stop motions. These high-speed units are available with 60 or 120 spindles.

**KIDDE MANUFACTURING CO., INC.**

42 Farrand Street, Bloomfield, New Jersey

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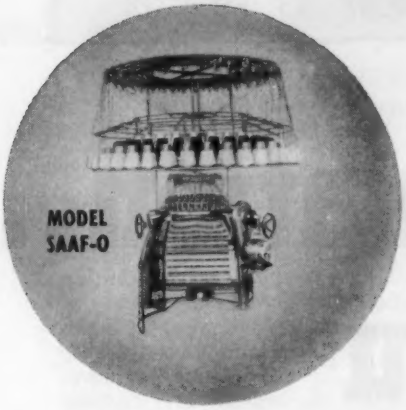


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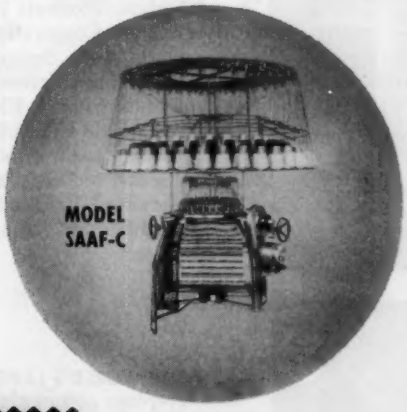
the latest word in modernized, low-cost knitting
of automatic, variable striped, patterned or solid jersey
*with* or *without* knit-on simulated rib trim
and draw thread section separators




★ **HIGH SPEED PRODUCTION**

Large number of feeds, rugged construction and stationary yarnstand give you vari-striped and patterned fabrics at unprecedented rates. Standard 26" machine has 32 four color striping boxes — 32 three position pattern wheels—32 automatic pattern placers.

★ **TREMENDOUS VERSATILITY**

Striping boxes, pattern wheels and placers on every feed let you pour out an infinite variety of striking, multi-colored fabrics — with pattern inserts twice the size previously possible. Knit a wide variety of fabric construction and textures with virtually any type of natural or synthetic yarn.

★ **HIGH QUALITY AT LOW COST**

Knitting efficiency and quality are insured by these ingenious new features—128 cone, "step-design" (Pat. Pend.) yarnstand, new knitting elements system, new striping box with easy, manual setting, new pattern placer with slideable studs for fingertip control and new, scissor-type, synchronized "no-waste" cutters.

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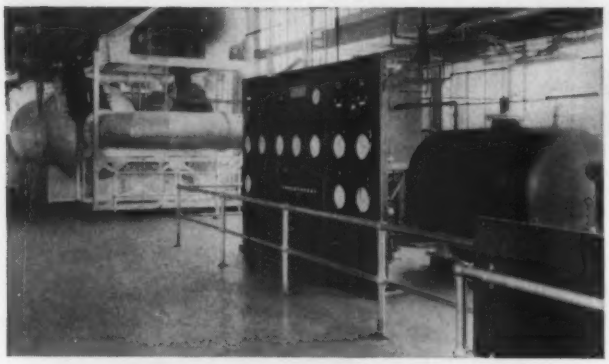
WHAT'S NEWS AT BRISTOL . . . WHAT'S NEWS AT BRISTOL

# Bristol...automation... and you

Magic word, automation. Or push-button operation. It's a breath-taking concept, too – plants running practically unattended.

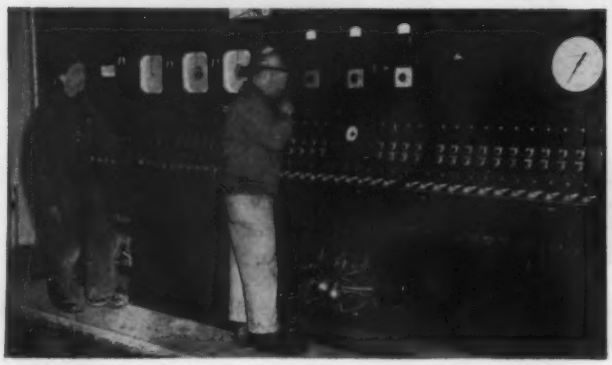
Breath-taking – but not *new*.



**BRISTOL COORDINATED CONTROL SYSTEM** automatically controls operation of "Columbia" Activated Carbon Solvent Recovery Plant at the New York Daily News. Similar control systems are used in many other solvent recovery plants designed and supplied by Carbide and Carbon Chemicals Company, a Division of Union Carbide and Carbon Corporation.

**BRISTOL'S "MECHANICAL BRAIN"** is the leader of the Coordinated Process Control System . . . accurately coordinating all the variables, including mechanical operations, so that each phase of the process takes place in proper sequence.

**AUTOMATION** is often thought of in terms of plans or even dreams; here at the Buffalo Foam Rubber Products Plant of the Dunlop Tire and Rubber Corporation, it is a reality. This automatic plant, designed and built by Mechanical Handling Systems, Inc., Detroit, uses Bristol Dynamaster® Electronic Instruments and Automatic Controllers as part of a process employing today's most advanced automatic production techniques. The result – greater efficiency and productivity, lower costs, improved product, and stronger competitive position.



**THE WORLD'S LARGEST COAL CLEANING PLANT** employs automation in lubricating system. The Hanna Coal Co., Adena, Ohio, uses *Bristol Controls and Recorders* in its fully automatic time-controlled centralized system for mass lubrication. This system promotes safety and, above all, insures positive delivery of the right lubricant in the right quantities at the right time to all bearings, regardless of operating conditions.

## Twenty-one years ago . . .

'Way back in 1934, The Bristol Company led the way in the field of automation by developing the Bristol Systems of Coordinated Process Control.

These systems automatically controlled and coordinated all of the variables and operations of a process—such as the time of operation of valves, pumps, blowers, dampers, and the control, at a definite value or according to a time program, of variables that affected the uniformity, quality, cost, and yield of a product – such as temperature, pressure, liquid level, flow, pH, humidity, and speed.

RESULTS: They eliminated variations in processing that caused inefficiency – cut down rejections and waste – insured product uniformity – helped cut processing time as much as from 10 days to less than 30 minutes. And these systems quickly paid for themselves.

A REVOLUTIONARY CONCEPT: They brought automatic plant operation to a startling reality and were hailed at the time as a fundamentally new development – which would in time revolutionize manufacturing.

Today, Bristol Coordinated Control Systems are used in the chemical, oil refining, rubber, tobacco, textile, steel, metal working, food, paper, the automotive industries, and many others. They are so completely automatic that it is only necessary to push a button to start up, another to shut down.

## The modern solution to processing and manufacturing control problems

Bristol's System of Coordinated Process Control is made possible only by the following unique combination of facilities, which have been developed during 66 years of building and applying thousands of automatic control systems and instruments in practically all industries:

1. The complete line of modern Bristol Automatic, Controlling, Recording, Electronic, and Telemetering Instruments, representing some of the most advanced ideas in instrument engineering.
2. Bristol's Fully-Automatic Time-Cycle Controllers or "Mechanical Brains".
3. Bristol's ability to combine electronics and the mechanical phases of automation.
4. The ability and facilities of Bristol's engineering staff, gained by long experience and Bristol's pioneering work in the field of automation.

## Bristol Application Engineering is at your service:

Our application and field engineers are ready to solve control problems involving automation and Coordinated Process Control Systems by working jointly with your research, development, and plant engineers.

## Have you an automation problem?

Our application engineers and nation-wide group of field engineers would like an opportunity to work with your technical staff on any problems of automation for which Bristol Controlling and Recording Equipment and Bristol Coordinated Control Systems appear to be the solution.

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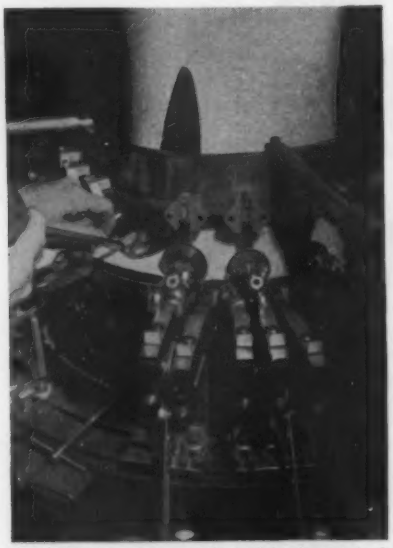
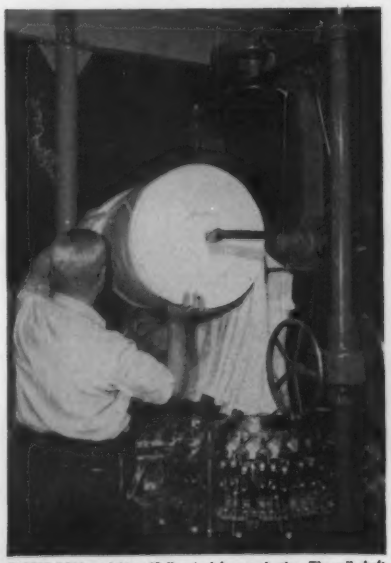
- **Stop motions that operate on cloth wheels**
- **Feed units that allow a feed for each diametrical inch**

**By JAMES H. BLORE,** Assistant Editor, TEXTILE WORLD

CLEANING with the air hose removes lint four times each shift. There are 20 feeds arranged around the 20-in.-dia. cylinder.



INSIDE BURRS have an oil reservoir that is filled at the start of each shift. A space is left between the front feeds for stitching on.



FABRIC ROLL, weighing 65 lbs., is 4 hrs. production. The roll shaft is retained by a rail that swings down for easy doffing.

BY INSTALLING new spring-needle knitting machines in the Ford Mfg. Co. plant, Waterford, N. Y., Robert Reis & Co. is retaining high quality but speeding production of its underwear fabrics. The new machines, built by Precision Knitting Machine Co., rotate at high speed and have more than the usual feeds arranged around the cylinder.

### Cylinder Speed Is 90 Rpm.

The first machine installed was a 28-g[illegible] This mach[illegible] mon[illegible] of [illegible] ch[illegible]

th[illegible] up[illegible] unc[illegible] com[illegible] is [illegible] inc[illegible]

co[illegible] us[illegible] or[illegible] ab[illegible]

cl[illegible]

t[illegible] t[illegible] e[illegible]

cleane[illegible] side burr rec[illegible] of stainless needle oil. Each burr has an oil reservoir that keeps the burrs lubricated for 8 hrs.

Only one burr is used behind each feed; this one is a combination lander and cast-off burr. The burr is sunk in a bracket so that the cloth is lifted clear of a burr when the fabric is stitched on the needles. Individual feeds are then cleaned with the air hose while the yarn is held taut with the left hand. Each outside burr reservoir is then filled with stainless needle oil.

The yarns are then checked for correct threading, and the machine is turned over slowly. A hand wheel, [illegible] be turned in only one [illegible]

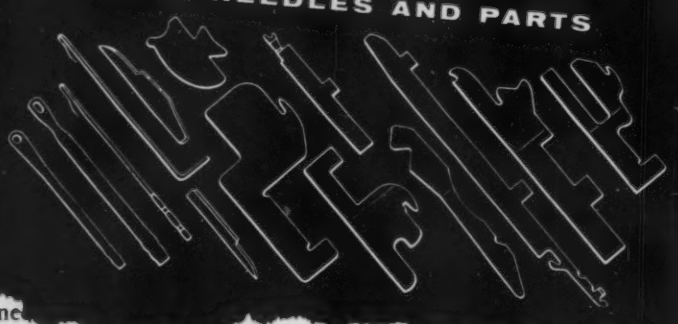
The st[illegible] when fabric passes under the wheel, and the machine won't start if there is no fabric over the feeler. So far, press-


Ives Helped!

Once again IVES precision-made needles, specially hardened and tempered from more durable vanadium steel, made headlines possible. Your machines will produce better fabric, too, at lower cost when equipped with IVES needles and parts for circular and tricot knitting machines. Let IVES help YOU increase profits. Write or wire . . .

THE LOYAL T. IVES COMPANY, INC.
NEW BRUNSWICK, N. J.

IVES NEEDLES AND PARTS



# ANNOUNCING!

**...A TOTALLY NEW NEEDLE LUBRICANT for fine-gauge full-fashioned and seamless knitting machines**

# SHELL VEXILLA OIL 117

1. **12 TIMES GREATER RUST PROTECTION** than the best current oils . . . during both operating and shutdown periods.

2. **Eliminates green soap formation,** and minimizes machine oxidation.

3. **Controls nylon size deposits,** and permits easy cleaning during shutdown periods.

4. **Very low surface tension,** resulting in increased wetting and lubrication.

5. **No gummy deposits . . .** contains no fatty acids.

**Shell VEXILLA OIL 117** establishes a new set of standards in knitting machine lubrication. Test it in comparison with the oil you are using. Write for further information.

**SHELL OIL COMPANY**
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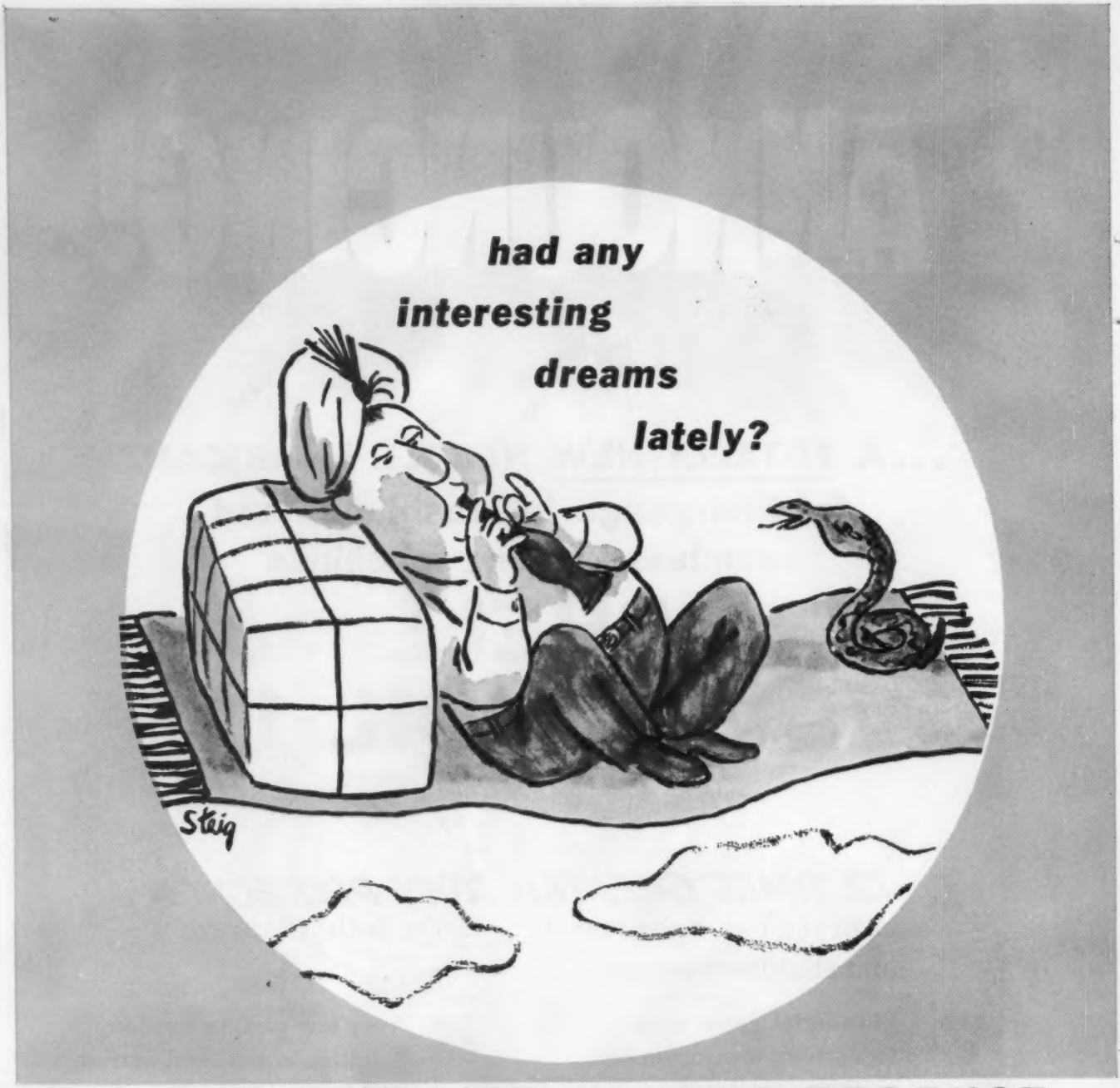



**WILL PUT NEW LIFE IN YOUR PRODUCT**

# THE NEW Nylon Staple ...BRING NEW PRODUCTS TO LIFE!

**9 CHANCES OUT OF 10, the NEW Nylon Staple by IRC can make your dream of a new product, or product feature, come true. Here's why.**

It's completely and entirely *new*—with a new brighter-than-bright luster that creates sheen without shine... a new crimp that can come up with new effects... it dyes quicker, deeper, with more absorbency *and* economy. You can get new resistance to abrasion with it, better spring-back, new strength with finer yarns. All adding up to greater economy and higher quality for you!

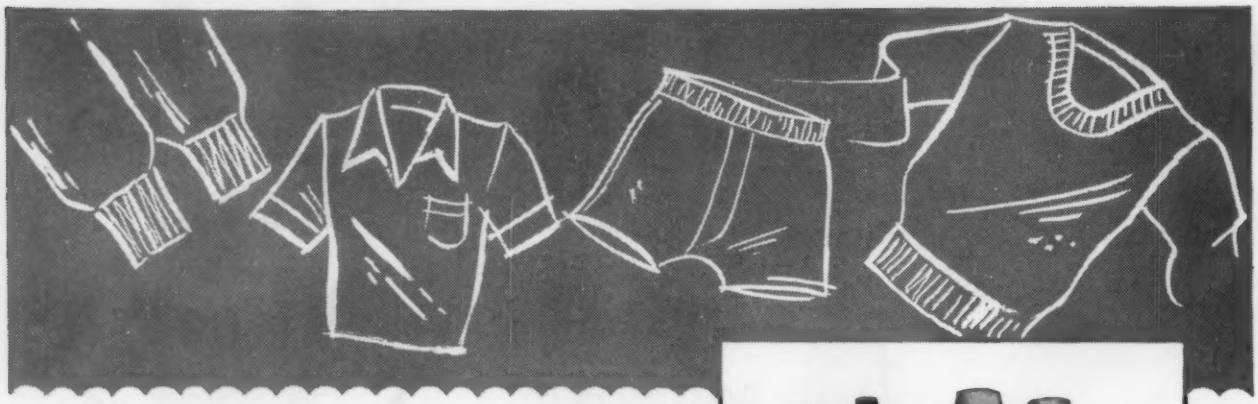
And you can expect the NEW Nylon Staple by IRC to give you the same cost-cutting uniformity and performance that industry has come to expect of IRC rayon yarns.

- **NEW LUSTER** • **NEW DYEABILITY**
- **NEW CRIMP** • **NEW ABRASION CHARACTERISTICS**
- **NEW RESILIENCY WITH LESS CRUSHABILITY**
- **NEW STRENGTH... AND NEW ECONOMY FOR YOU**

I·R·C

Industrial Rayon Corporation

Sales Offices:
500 Fifth Avenue, New York 36, N. Y.
627 Guilford Building, Greensboro, N. C.

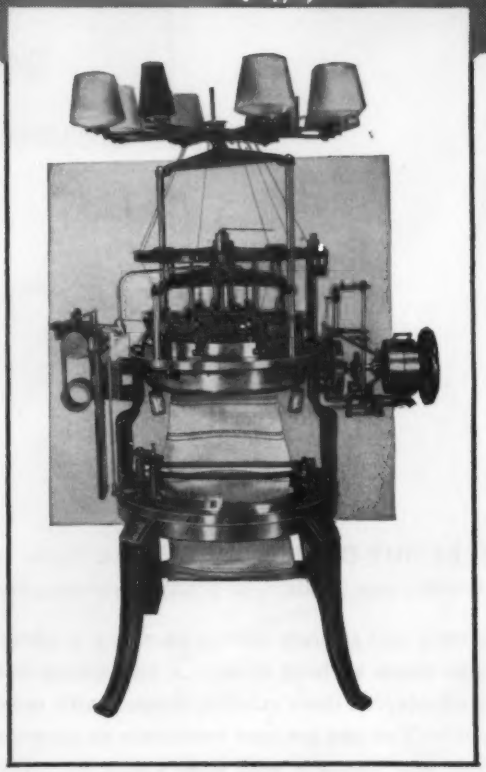


# a regular "ONE-MAN KNITTING MILL"

With the minimum of attention, this versatile, high-production machine can be set to turn out many varieties and combinations of stitches (one by one or two by two) striped fabric of unlimited patterns . . . English or round welt, French or tubular welt and clearing course or draw-thread.

Operates as a single feed machine or in any combination of feeds to produce fabrics for cuffs, sweater bottoms, collarettes, underwear, outerwear, sportswear and beachwear . . . Furnished with belt or individual motor drive.

For complete information on the Wildman Rib Fabric Striping Machine, write us today.



**WILDMAN RIB FABRIC STRIPING MACHINE**

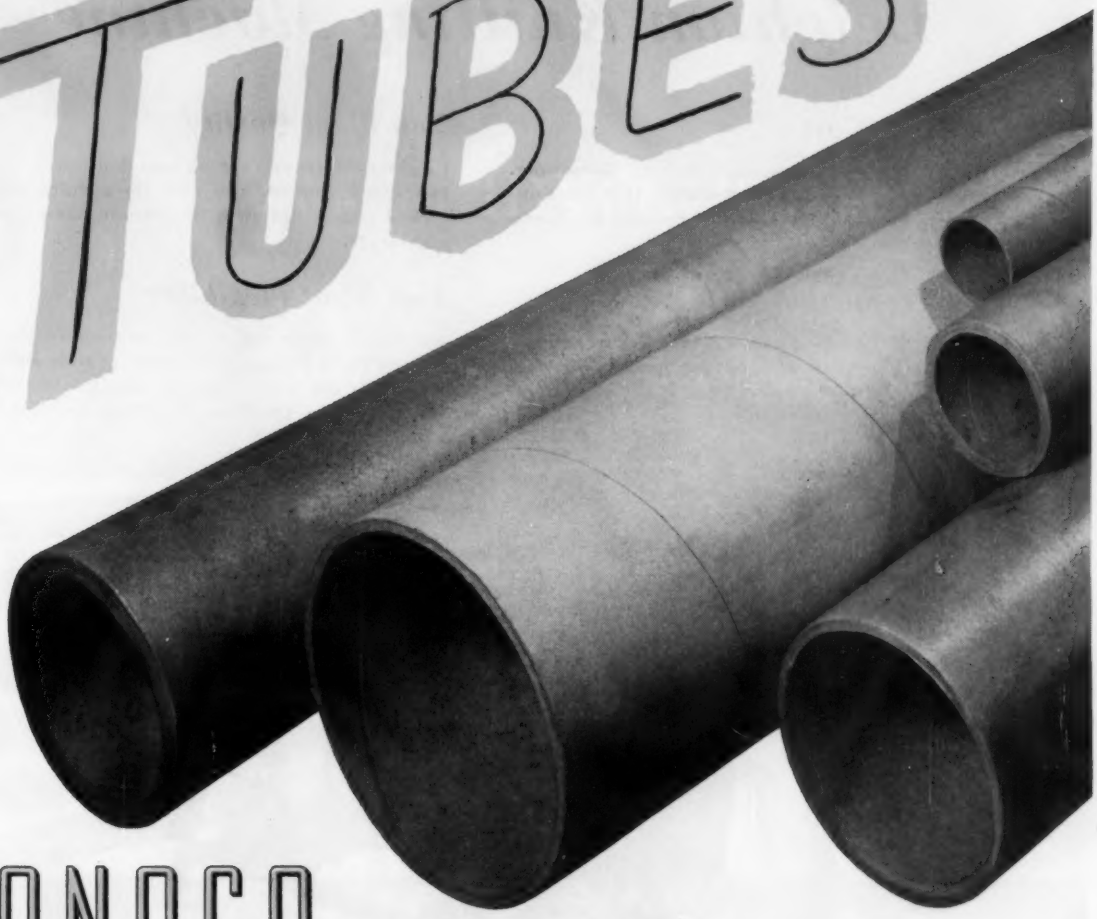
**WILDMAN**

***makes the machines that tend to their own knitting.***

WILDMAN MFG. COMPANY, NORRISTOWN, PA.

***Manufacturers of:*** **FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS**

# When it's textile TUBES



# SONOCO is the name to remember!

Sonoco produces spiral, convolute, parallel or drawn tubes in sizes from ⅛" to 36" I.D., in any practical length and wall thickness—for every textile need! Available in colors, various surfaces, treated, impregnated, perforated, scored, notched, printed, with crimped or burnished ends. Over 50 years' experience enables us to help you with any problem that can be solved with a paper tube.

**VISIT SONOCO**
Knitting Arts Exhibition
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• YARN TUBES • CLOTH TUBES • CREELING TUBES
• TUBES FOR NYLON STRETCH YARN • CARPET TUBES
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MEXICO: Sonoco de México, S. A., Apartado 10239, México, D. F.

DEPENDABLE SOURCE OF SUPPLY

# *Every*

## *Season is Sweater Season with*

# *Leighton Knitting Machines*

### *You Want Low Cost*

**You have no cutting with seamless sweaters. No sewing. Special attachment for brushing fabrics while they are knitting. Knitted trimmings also on Leighton circular machines.**

### *You Want Quality*

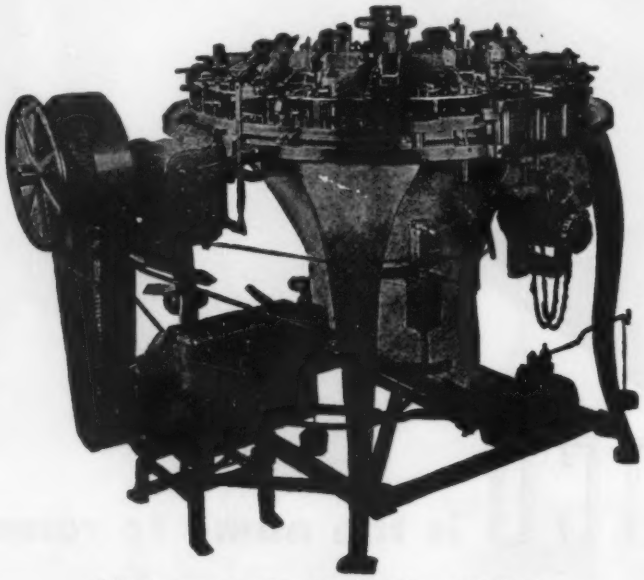
**Leighton Machines are custom built with multiple feeds, two speed control, two and three color stripes. Perfect racked edges. Seamless sleeves and bodies for infant sizes and larger.**

### *You Want Production*

**The big outer dial knits soft spun yarn with less end breakage. Leighton machines are easy on the newest synthetic yarn or the best lamb's wool.**

### *You Want Flexibility*

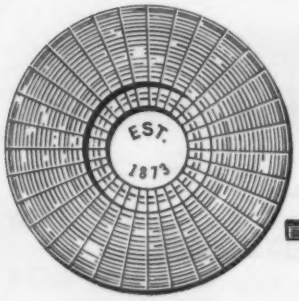
**On cool summer nights or frosty winter days the demand for the right sweater calls for a flexible knitting machine. You have the most versatile machine made for seamless sweaters when you have *Leighton Knitting Machines.***



**30″ Automatic Transfer Machine—12 Feeds**

**Two-speed Motor Drive** with electrical control system. Entirely automatic. Eliminates wear, simple to operate, no lag or lost time in shifting speeds.

**New Striper Arrangement** is fully assembled and may be readily attached or detached to each feed. Drum style with polished and hardened drum screws. Easily adjusted and located to give the desired striper selection—2, 3, or 4 finger striping on each feed.




# LEIGHTON MACHINE COMPANY

**··· MANCHESTER, NEW HAMPSHIRE ···**

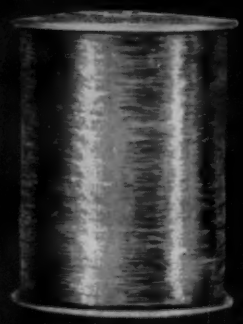
**MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES**

have you **investigated**

the revolutionary new

development in metallics...

# METLON® WITH MYLAR*



Gone are the restrictions that have limited the use of metallics in the past. **METLON**-with-**MYLAR** can be processed at the boil in dyeing and finishing . . . can be laundered and ironed at high temperatures. It will not cut on itself . . . boasts a 100% increase in tensile strength, yet gives up to 50% more yield to the pound! Investigate the infinite new horizons it opens in weaving and knitting — send the coupon for complete information and samples.

**METLON** makes everything look better

* DU PONT'S REGISTERED TRADEMARK FOR ITS POLYESTER FILM ® REGISTERED TRADEMARK A DIVISION OF ACME BACKING CORPORATION

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432 Fourth Avenue, New York 16, N.Y.

Yes, I would be interested in further information on METLON-with-MYLAR, particularly to be used

for..... (type of merchandise)

NAME..... TITLE.....

COMPANY.....

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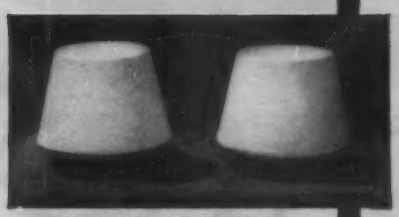
# FOSTER MODEL 202 AUTOMATIC CONE WINDER

***The Only Automatic Machine Which Produces***

## CONES SUITABLE FOR KNITTING

***SEE IT IN OPERATION***

**. . . at**
**Knitting Arts Exhibition**
**Booths 82-84 and 99-101A**



MODEL 102 and MODEL 202 CONES — IDENTICAL

FULL BOBBIN MOVING INTO SUPPLY POSITION—EMPTY BOBBIN BEING DOFFED

AUTOMATIC BOBBIN SORTER

The knitting cones (6" traverse and 8½" dia.) produced on this machine are identical in quality to those produced on the Foster Model 102, which has set the standard for the knitting industry for many years.

This machine increases production per hour per operator by 100% to 300% (depending on the kind and count of yarn), compared with modern, non-automatic machines.

It decreases operating costs proportionately, making it practical to replace non-automatic winders.

Only duties of operator are to drop full bobbin in a chute and catch the end in a clip in one single motion, don and doff cones and thread up. Everything else is automatic including tieing in of broken ends, doffing of bobbins and sorting of empty and partially filled bobbins.

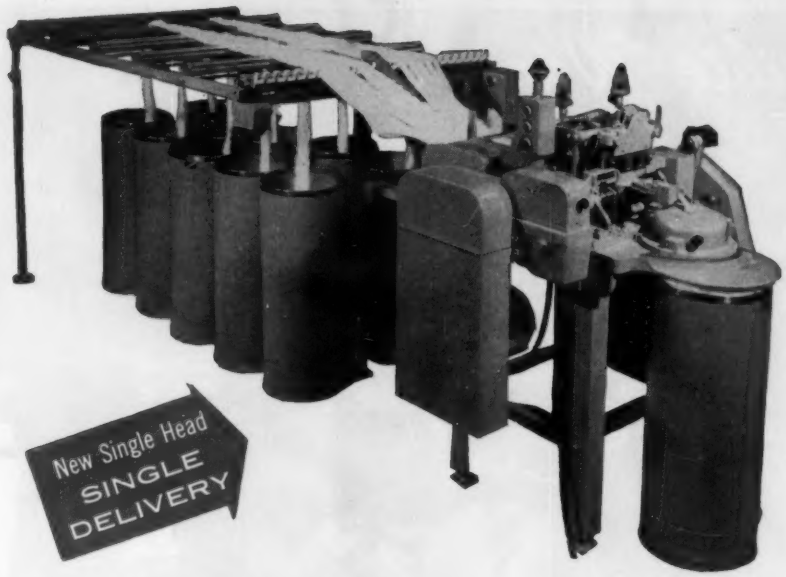
If you can't see this machine at the Knitting Arts Exhibition, do the next best thing. Send for Bulletin A-100 which gives the complete story. No obligations.

## FOSTER MACHINE COMPANY

***A Winder for Every Textile Purpose***

*Westfield, Massachusetts, U.S.A.*

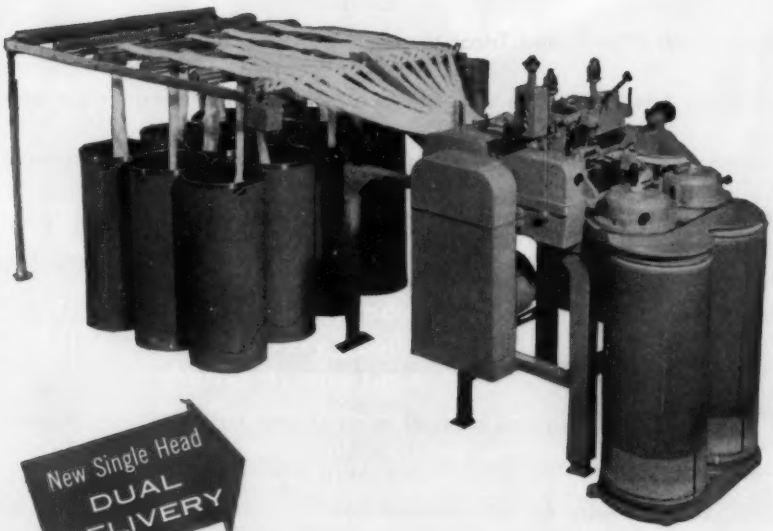
Southern Office—Johnston Bldg., Charlotte, N. C. • Canadian Representative—Ross Whitehead & Company, Limited, 1475 Mountain St., Montreal, Que. and 35-37 King St., W., Toronto, Ont. • European Representative—Muschamp Textile Machinery, Limited, Keb. Lane, Bardsley, Oldham, England.




● Yes, these new, redesigned Pin Drafters give you all the previous advantages of the Pin Drafter System, *plus* many new production advantages in the first and second operations. Combined with their lower initial cost, it all adds up to higher production per dollar for you!

# HIGHER PRODUCTION PER DOLLAR

## with *new* Warner & Swasey Pin Drafters®




*Take a look at these improvements:*

- **Capacity increased 25% with new 6" faller bars!**
  **From 4" effective pinning to 5".**
- **25% faster!**
- **50% higher production!**
- **Better balanced production!**
- **Easier operation!**
- **Less maintenance!**
  **Simplified design, sealed bearings.**
- **Larger capacity creel!**

But get the complete facts about these new Warner & Swasey Pin Drafters. Call in our nearest Field Representative today!

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WARNER & SWASEY
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PRECISION MACHINERY SINCE 1880
TEXTILE MACHINERY DIVISION

® *Reg. U.S. Pat. Off.*

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

# *Truly Flexible Warping*

Installation of Cocker High Speed Tricot Warpers and Creels. Insert shows Cocker Adjustable Post Tension with Balloon Breaker.

This combination of Cocker Creels and High Speed Tricot Warpers produces better knitting beams. It will efficiently handle a large variety of yarns and is truly outstanding on all fine denier yarns. The range of control provided by the Adjustable Tensions . . . the variable indicating presser roll . . . and its range of speed and ease of operation provides the ultimate in flexibility to meet varying knitting requirements.

The warpers and creels shown here are for handling filament beams 21″ x 21″.

These machines can also be built to meet your individual requirements.

Write or wire for full information.

**Will be shown at the Knitting Arts Exhibition**
**Booths 88—89—94—95**

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COCKER
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Machine and Foundry Co., Gastonia, N. C.

**WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT**

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LONG LIFE...
AND A
FAST
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# SUPRALANS

FOR
WOOL
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NYLON

*for*

- **unvarying reproducibility of shades**
- **good to very good light and wet fastness**
- **shorter dyeing time**

The simplicity of the neutral dyeing method of application yielding level fast shades without the aid of a leveling agent now permits wool dyers to achieve results in quality which were not possible prior to the introduction of SUPRALANS.

Better tensile strength, preservation of fibre texture, equal exhaustion properties and uniformity of shade on various types of wool are assured factors which can be assumed with SUPRALANS.

A few minutes conversation with GDC technical and sales representatives will serve to convincingly explain the exceptional dyeing characteristics of SUPRALANS.

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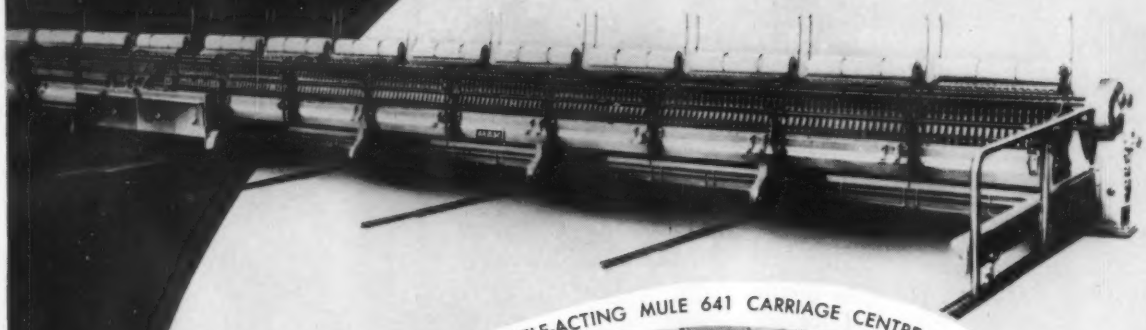
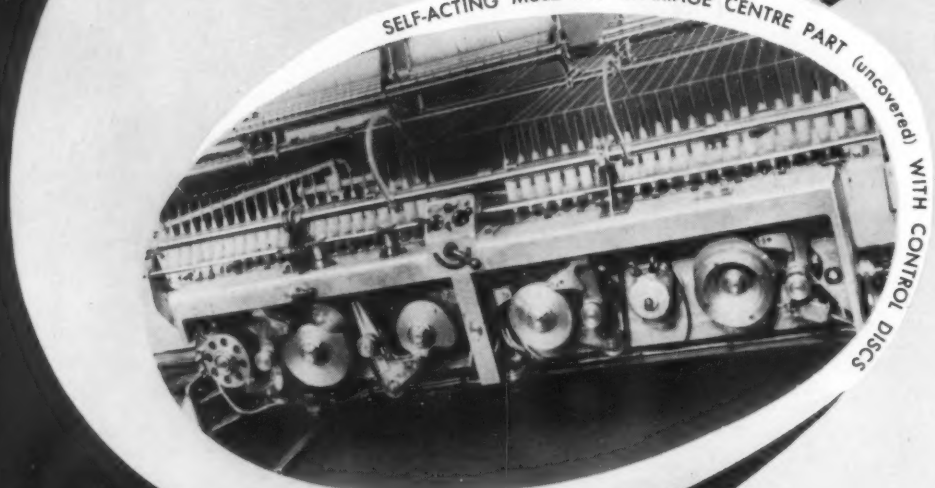




SELF-ACTING MULE 641 CARRIAGE CENTRE PART (uncovered) WITH CONTROL DISCS

# MASCHINENBAU KIEL AKTIENGESELLSCHAFT

## KIEL-FRIEDRICHSORT, GERMANY

At the German Industries Fair Hannover, April 24 to May 3, 1955, we exhibit *Diesel Locomotives* in the Open Air Area, Essener Strasse, block D, stand 406. We show spinning machines in the experimental spinning mill of our plant.

from Thermoplastic Fibers to

# HIGH BULK and STRETCH YARNS at INCREASED SPEEDS

with HERR CONICAL RINGS and HERR FLYERS

Research in yarn bulking processes is at a high pitch. New high bulk yarns are appearing at an unprecedented rate. Keeping abreast of this new science is our business. Textile engineers everywhere look to Herr for the fastest most practical methods of spinning and twisting these modern yarns.

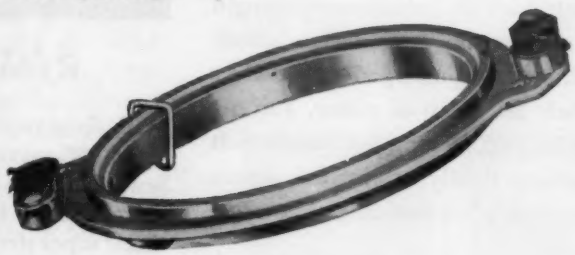
Herr Flyers produce light tensions at high speeds — perfectly balanced for accurate yarn control and reduced vibration. Special Herr Flyers for installing twist and untwisting are available. Nylon bearings balance the action of the yarn and reduce bearing contact on the spindle for perfect control of twist and untwist.

Herr Conical Rings are self lubricating with minimum oil consumption and long Traveler life. Controlled lubrication results in clean yarn especially valuable when handling the new bulk or stretch yarns.

Let Herr Engineers solve your Twisting and Spinning Problems. Let us show you how easy it is to get into this new and profitable production of high bulk yarns.

*See us at the Knitting Arts Exhibition at Atlantic City — Booth Nos. 38-39.*

HERR Lightweight Flyers



HERR Conical Rings

*Ask for help on your problem.*

*Pease send us your literature.*

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COMPANY.....

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CITY..... STATE.....

# HERR MANUFACTURING CO., INC.

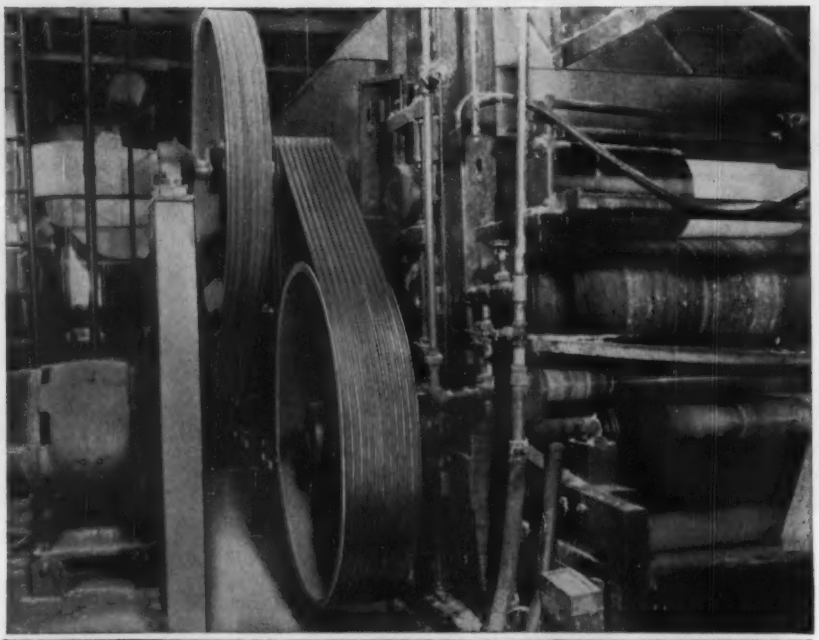
309 FRANKLIN STREET, BUFFALO 2, NEW YORK

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON AND BLENDED YARNS OF ALL TYPES

# HOW TO BUY V-BELTS

## FOR TOUGH, RUGGED DRIVES

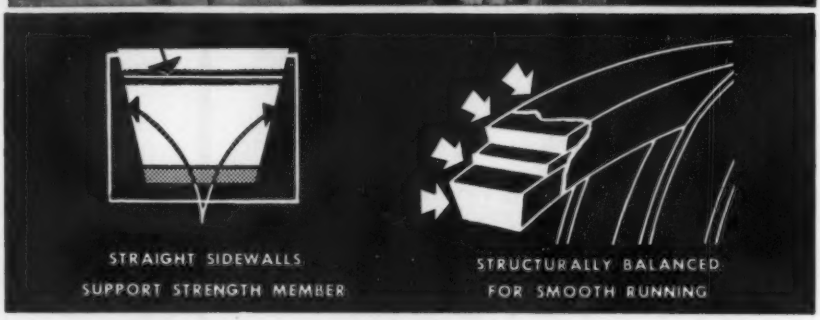
### . . . and get "More Use per Dollar"



Look for a V-belt construction that provides longer life under shock loads . . . extra strength with the use of the right synthetic strength member.

Precision balance of all parts of the V-belt makes for a smoother running drive, fewer matching problems . . . and longer life for all belts on a multiple drive. Belt strength members of super-strength cords should be correctly positioned in the neutral axis section of the belt so as not to stretch or compress unnecessarily as the other parts of the belt are flexed in use. Straight belt sidewalls help support strength members in a straight line, permit all cords to pull equally . . . deliver their full share of power. You get more grip, less slip because the belt presses tightly against the sheave grooves when rounding pulleys.

Specify by name the V-belt engineered to give you extra strength and extra pulling power . . . specify R/M Super-Power V-Belts.




## R/M SUPER-POWER V-BELTS

With these superior V-belts you get up to 40% more power capacity, or fewer belts can be used on the same drive, thanks to R/M's new synthetic super strength member. They provide greater elastic resistance to shock loads and permit virtually no stretch. R/M Super-Power V-Belts are oil-proof, non-spark, heat resistant. You get the balanced combinations of features you need for more power on rugged multiple drives. Let an R/M representative show you how R/M Super-Power V-Belts, as well as Condor V-Belts, last longer on the job . . . give you "More Use per Dollar".

RM-812

RM

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

## RAYBESTOS-MANHATTAN, INC.

Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings
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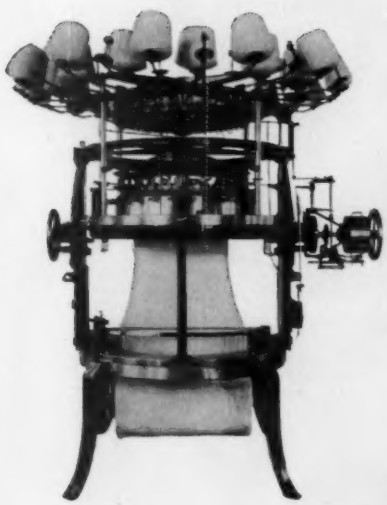
# TORRINGTON NEEDLES

## *Promote Flexibility on the Wildman Interlock Machine*

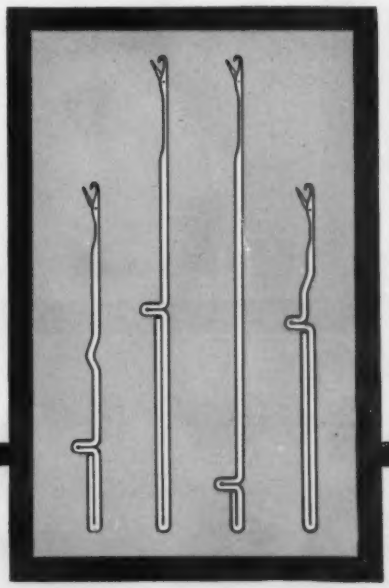


***FOR EXAMPLE,*** where versatility is an important feature. Typical of the wide range of quality merchandise produced on this machine are the smartly styled Orlon sweaters illustrated here. To provide full scope for this versatile machine, Torrington supplies a complete range of needles for all gauges, all knitting requirements.

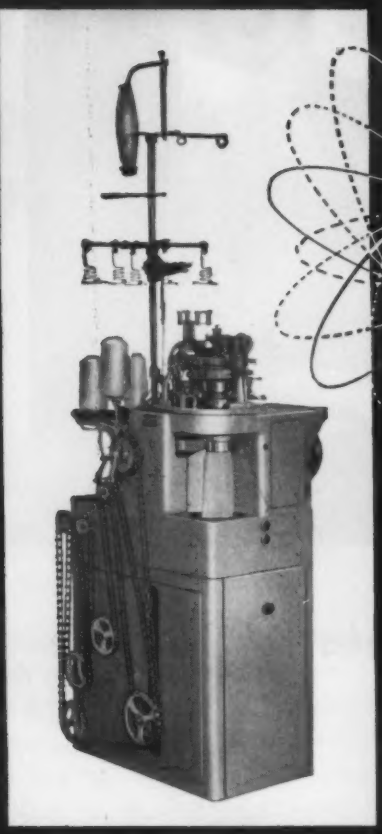
"Many of our customers depend on Torrington Needles to help them maintain the steady, trouble-free performance for which all Wildman machines are noted," says Mr. F. E. Paul, Vice-President of the Wildman Mfg. Company, who adds, "The extreme accuracy of these needles is an important asset in producing fine knitted fabrics."

Torrington's long experience in producing needles for every knitting requirement... latch, spring beard and leaded units... is available to help you on any knitting problem. Our staff of knitting machine needle specialists will welcome the opportunity to work with you. A call to our nearest office will receive immediate attention.

**THE TORRINGTON COMPANY**
Torrington, Conn., U.S.A.
Established 1866



*There's a* **TORRINGTON NEEDLE**
*for every machine... for every type of knitting*



# NOW 400 NEEDLE SEAMLESS STOCKINGS AT THE PUSH OF A BUTTON!

## . . . WITH THE *NEW* FIDELITY "400"

*The FIRST completely new development in high-speed circular knit hosiery equipment in over thirty-five years!*

- Electronically controlled with approved General Electric THY-MO-TROL.
- Push button operation.
- Accepted and approved by leading hosiery mills.
- Individual motor eliminates line shaft.

*The ONLY electronically controlled machine to produce 400 needle seam-free ladies' hosiery.*

Leading hosiery mills are setting new standards for production—and profits—with this revolutionary high-speed knitter. See it in operation at our showrooms . . . or visit with us at the Knitting Art Exposition in Atlantic City.

*Designers and Builders of Intricate, Automatic Precision Machines*

SINCE 1911

**FIDELITY MACHINE COMPANY, INC.**

**3908 - 18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.**

EXPORT DEPT.: 25 BEAVER STREET, NEW YORK 4, N.Y.

# THIS TWISTER IS 3 MACHINES IN ONE!

**NEW U.S. ACME Combo TWISTER**

**CONVENTIONAL UP-TWISTER**

**HEADLESS PACKAGE UP-TWISTER**

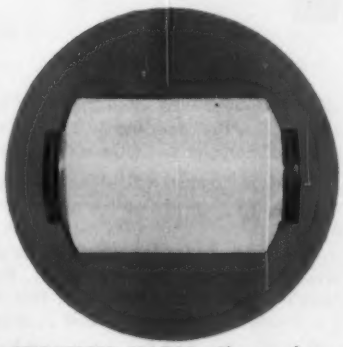
**WITH PERMANENT MANDRELS**

Now, with three twisters combined into one machine—THE NEW U. S. ACME COMBO TWISTER—throwsters can have new, money-saving versatility never before available in one basic production unit! The COMBO handles all types of synthetic yarns on straight, conical or bottle type supply packages and accommodates "Stretch Yarn" processes. Write, phone or wire for full information.

**SEE ALL OF THESE U. S. ACME MACHINES IN OPERATION AT THE KNITTING SHOW**

**BOOTHS 178 to 182**

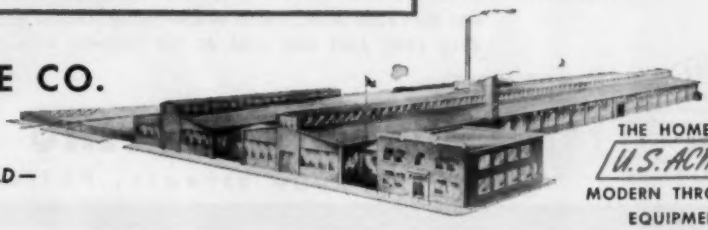
- **T P TWISTER**
- **2-lb. pirns on COMBO TWISTER**
- **Vertical SPOOLER**
- **Special Machine for TASLAN & BANLON**



STRETCH YARN—Shown here is a headless package of Nylon "Stretch Yarn" twisted and processed on the new U. S. ACME COMBO TWISTER.

**U. S. TEXTILE MACHINE CO.**
**SCRANTON 8, PENNA.**

*—OUR SERVICE POLICY LEADS THE FIELD—*



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# For That HIGH-FASHION That Sells . . . TODAY AND EVERY DAY

DON'T LOSE SALES when Fashion Changes! Get The Unmatched PERFORMANCE and the VERSATILITY that ONLY the Complete Line of CIRCULAR JACQUARD* KNITTING MACHINES offers YOU.

With the complete Jacquard line, you can produce alone . . . or in combination any of the following—Rib . . Jersey . . Interlock . . Reverse Jersey . . Links & Links . . Tuck effects . . Selective Transfer . . *Unlimited* stripes, *Unlimited* pattern designs, *Unlimited* pattern placements, *Unlimited* pattern size . . Four colors . . Stitch designs . . Panels . . Collars . . Seamless . . Fine cuts . . All of the above with 2 x 2 or 1 x 1 Knitted on Cuff . . in sizes.

Here are just 4 of the many machines in the Circular Jacquard* Line that keep your *sales UP* . . your *profits UP* . . your *costs DOWN* with high-fashion, low-cost, quality sweaters and sportswear that ALWAYS SELL!

- The TAI INTERLOCK and PLAIN TRANSFER (RIB) KNITTING MACHINE for the popular, softer, fine cut interlock and jersey.
- THE TJ-12 TRANSFER (RIB) MACHINE—the most versatile of all—offers *unlimited* pattern possibilities.
- The TA-4 PLAIN TRANSFER (RIB) MACHINE for high production of jersey, in sizes.
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YOU'LL NEVER WORRY ABOUT FASHION CHANGES with a CIRCULAR JACQUARD* KNITTING MACHINE IN YOUR MILL. You'll get HIGHEST QUALITY WORK, LOWEST COST OPERATION with the MOST RUGGED and VERSATILE line ever developed. Write, wire, or phone today for additional information that will put PROFITS in your FUTURE. No obligation.

***FOR THE LATEST DEVELOPMENT IN KNITTING MACHINES, BE SURE TO VISIT OUR BOOTHS #341, #342, #349 AND #350 AT THE KNITTING ARTS EXHIBITION, ATLANTIC CITY***

*TRADE MARK

CIRCULAR For Jacquard Knitting Machine Co. JACQUARD

## JACQUARD KNITTING MACHINE CO., INC.

"G" and Cayuga Streets, Philadelphia 24, Pennsylvania

# *New... from Du Pont:* "SEVRON"* *dyes that give stay-bright colors to* "ORLON"† *and* "ORLON" and Wool *blends*

Bright colors for "ORLON" and "ORLON"-wool blends keep their beauty with Du Pont "SEVRON" dyes. Developed *specifically* for "ORLON", these dyes give good light fastness and excellent wash fastness. Level dyeings in a wide range of colors mean bright shades may be duplicated easily from run to run.

A major advance in dyeing "ORLON" and other acrylic fibers, "SEVRON" dyes have a direct affinity for "ORLON" Type 42 fiber. You can apply them directly to stock, top, yarn and piece goods without using the copper method. They give excellent build-up in heavy shades, too. So specify "SEVRON" dyes by Du Pont the next time you dye "ORLON":

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|---|---|
| "SEVRON" Yellow L | "SEVRON" Blue B |
| "SEVRON" Yellow R | "SEVRON" Blue 2G |
| "SEVRON" Brilliant Red 4G | "SEVRON" Green B |
| "SEVRON" Red L | "SEVRON" Orange L |

**Let us work with you** on your dyeing problems with any of the new fibers or blends of the new and old. For technical aid, simply write to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

* *Trade-mark*

† *"ORLON" is Du Pont's trade-mark for its acrylic fiber.*

*Du Pont Dyes*

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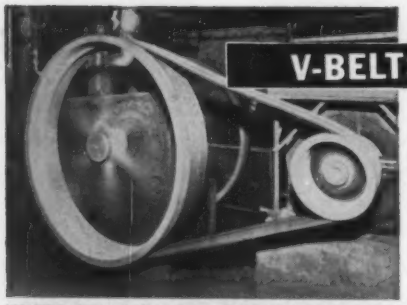
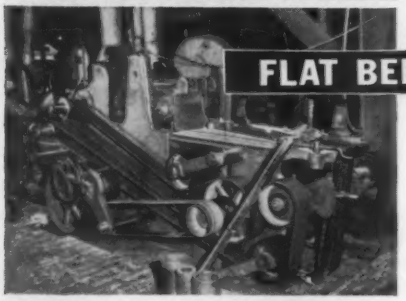
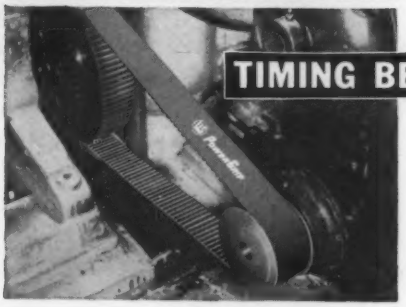
**BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY**

# A complete line of

## Flat Belts, V-Belts and Sheaves and "TIMING"® Belts and Sheaves

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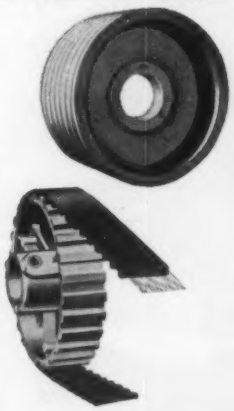
U. S. Rubber power transmission technicians are always ready to help you. Get in touch with one of our selected distributors or any of our 27 District Sales Offices or write to address below.

**MULTIPLE V-BELTS • F.H.P. V-BELTS**
**SHEAVES • FLAT BELTS AND BELTING**
**SPECIAL PURPOSE BELTS**
***PowerGrip*® "TIMING" BELTS AND SHEAVES**



### V-Belt Sheaves and "TIMING" Belt Sheaves

are tested for static balance and engineered to deliver the high durability and efficiency that are built into every "U. S." Belt.

US RUBBER

*"U. S." Research perfects it*
*"U. S." Production builds it*
*U. S. Industry depends on it*

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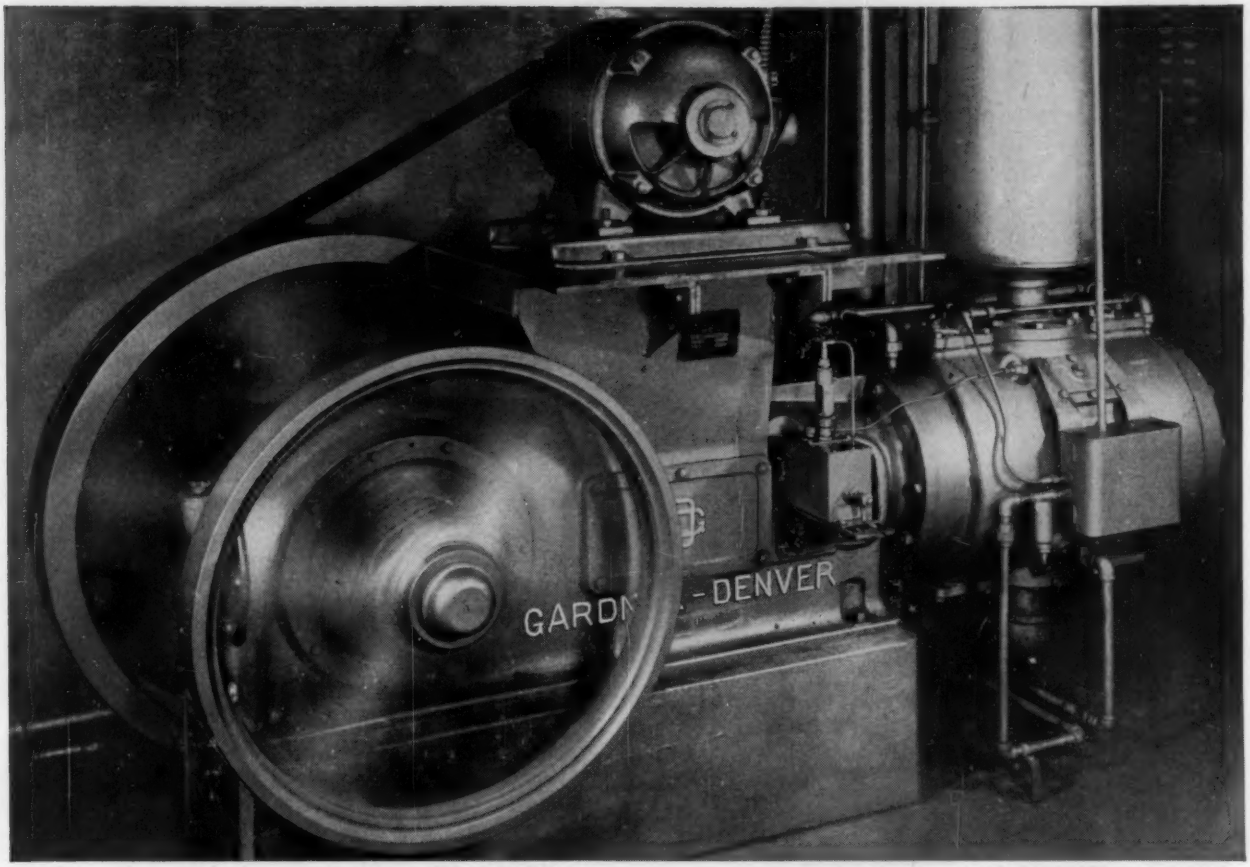
**MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.**

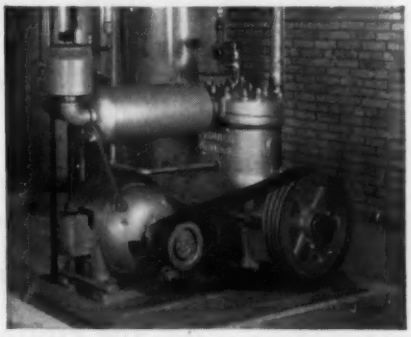
**Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting**




Model RX — 89 to 1292 c.f.m. Bulletin HAC-40.

# MORE GARDNER-DENVER HELP FOR YOU IN THIS AGE OF AIR POWER

Model AA — 32 to 183.6 c.f.m. Bulletin AA-6.



* Expert help in choosing the right size and type air compressor for your plant.
* Pointers on compressor care and maintenance to help you obtain the full efficiency of Gardner-Denver quality.
* Application suggestions for utilizing low-cost air power from Gardner-Denver compressors.

GARDNER-DENVER Since 1859 — KELLER TOOLS

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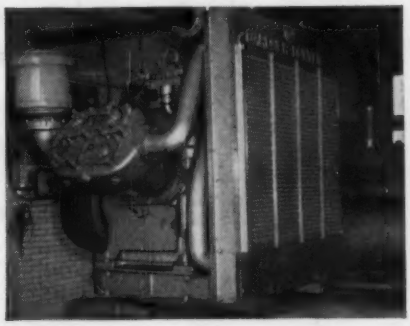

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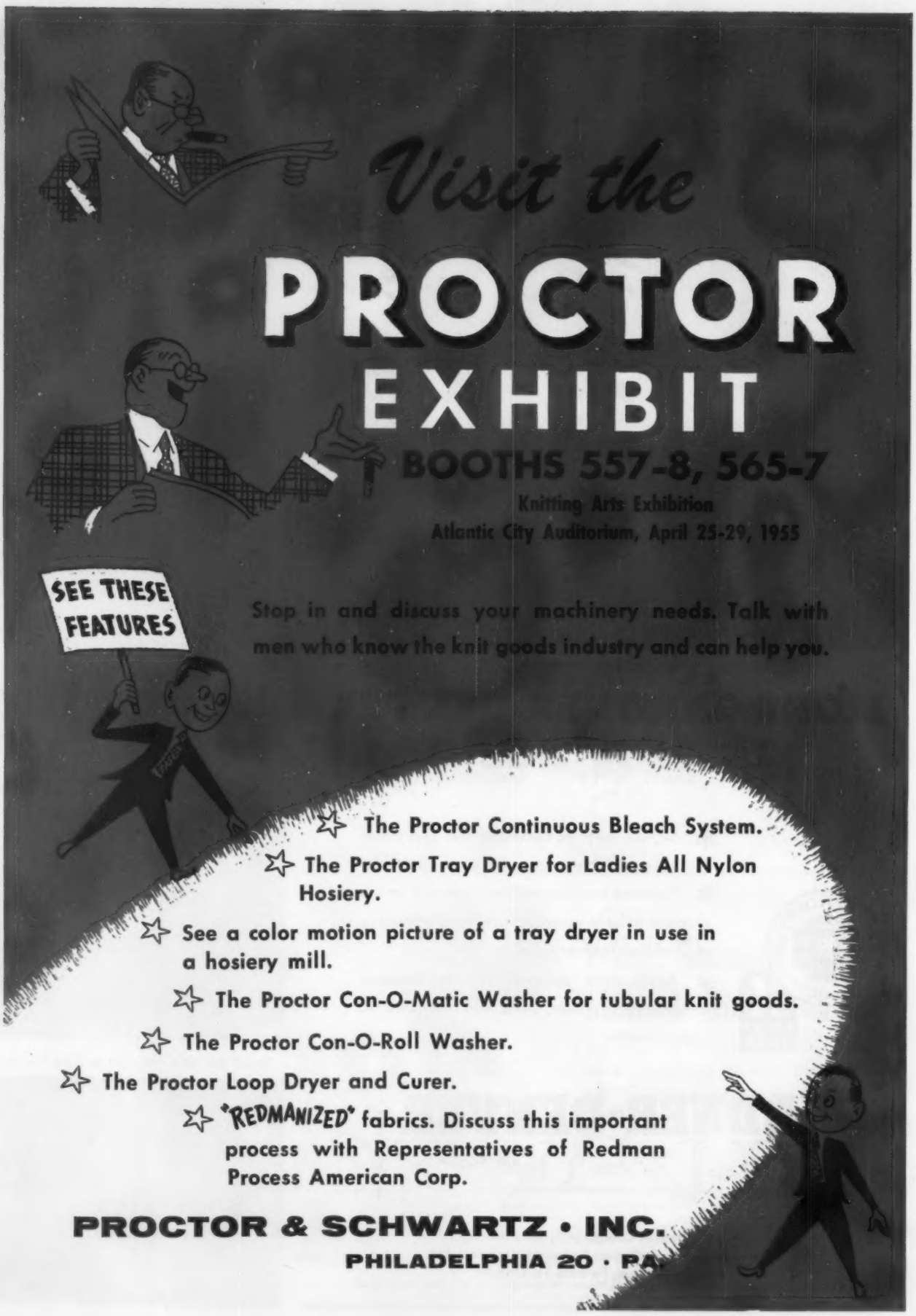
**Atlanta, Ga.; Birmingham, Ala.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.; New Orleans, La.; Louisville, Ky.**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Stop in and discuss your machinery needs. Talk with men who know the knit goods industry and can help you.
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See a color motion picture of a tray dryer in use in a hosiery mill.
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*Monsanto*
TEXTILE
TALK

# NEW STAR

## joins Monsanto's famous team of catalysts!

### *AC-6 steps up curing efficiency as much as 25%*

Resin-finished textiles can now be cured more rapidly—more efficiently.

New AC-6 was formulated by Monsanto for faster catalytic action. It lets you approach complete resin utilization at the lowest possible cure cycle.

Uniformity of resin application is assured by its relatively long bath life. Catalyst AC-6 also permits full development of fabric properties. There is minimum resin add-on—minimum danger of odor formation.

You get all this—and economy, too. Increased catalytic activity is combined with low product cost.

AC-6 is compatible in resin baths with urea formaldehyde, methylated methylol melamine, modified urea resins, and most cationic, anionic and non-ionic softeners and penetrants.

In mill runs on cotton fabric, Catalyst AC-6 has demonstrated its ability to outperform other catalytic agents. When AC-6 was added to the bath, identical fabrics showed superior emboss durability, gloss retention and wrinkle recovery.

Mail coupon today for technical bulletin and sample bottle of Catalyst AC-6.

*For faster, low-cost curing . . .*

**CATALYST AC-6**

MONSANTO

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Please send me, without obligation, the technical bulletin on new Catalyst AC-6, and 8-oz. sample bottle.

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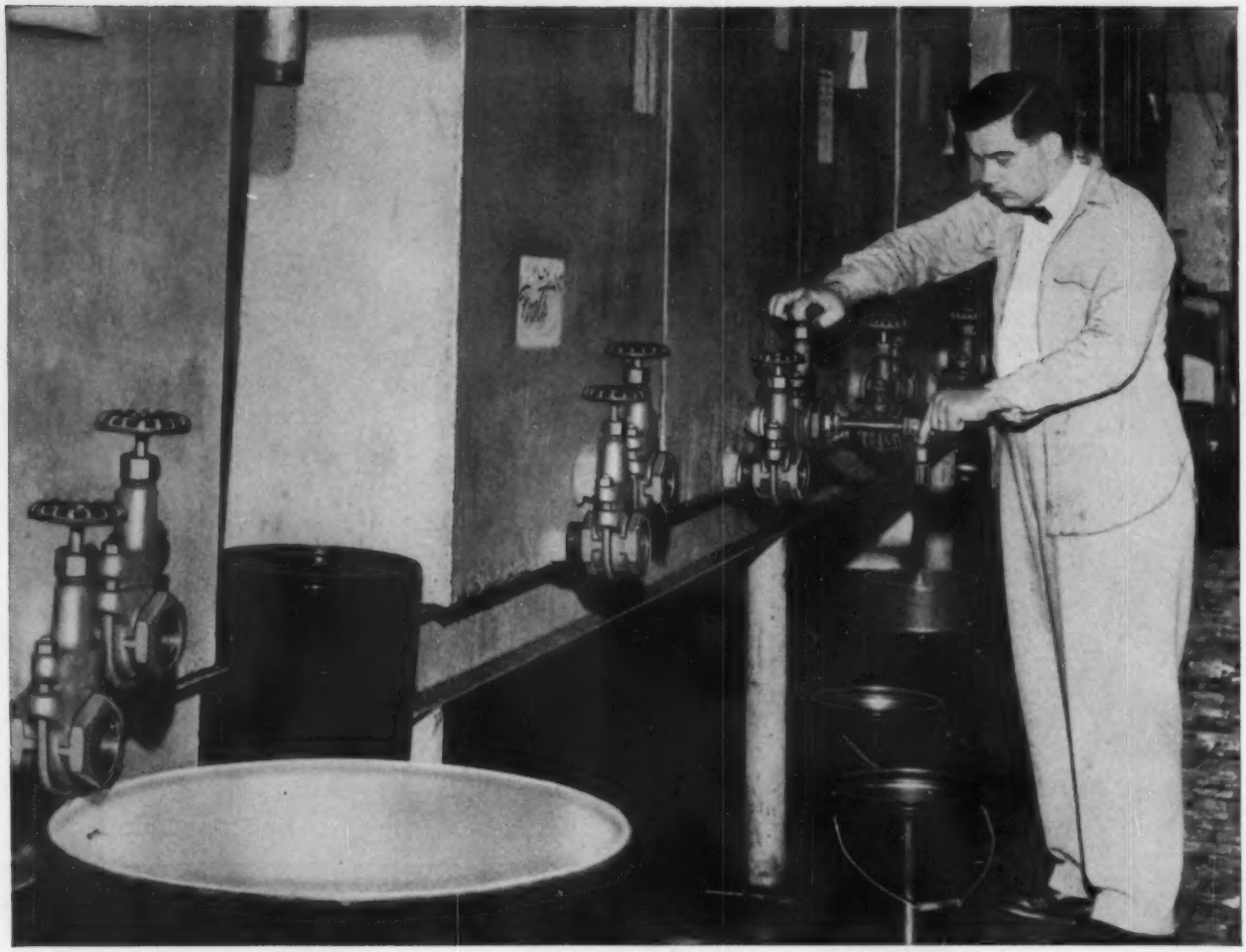


# Leakage troubles here stopped by these CRANE VALVES

**THE CASE HISTORY**—Read why Hysan Products Co., Chicago, changed to Crane Clamp Gate Valves in all process and storage piping. Hysan makes liquid waxes, pine oil and coal tar disinfectants, liquid soaps, and similar chemical specialties.

Valves formerly used were similar to Crane Clamp Gates, but only in appearance. They lasted no more than 2 to 6 months—leaking at seats and disc with no more than 3 to 12 operating cycles daily. Maintenance and replacement costs mounted—as did down-time losses. The leaky valves on tank lines forced repeated transfer of storage stocks. As many as 3 men were needed to make valve repairs.

All this trouble stopped when the plant installed Crane No. 488 Clamp Gates. After almost 2 years' service, these valves show no sign of wear or leakage. An occasional pull-up on the packing is all they need—and one man handles all piping maintenance.

**CRANE**
**CLAMP GATE VALVES**

Rugged design with careful, close tolerance machining, especially on seating surfaces, sets these Crane valves apart from others. They give long-lasting tight closure under frequent operation and on hard-to-hold fluids. Many patterns to choose from—all-iron or brass-trimmed. See your Crane Catalog or Crane Representative.

# CRANE CO.

*General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
*Branches and Wholesalers Serving All Industrial Areas*

**VALVES • FITTINGS • PIPE • PLUMBING • HEATING**

**CRANE'S FIRST CENTURY . . . 1855-1955**

*BETTER THAN EVER*

*for better-than-ever*

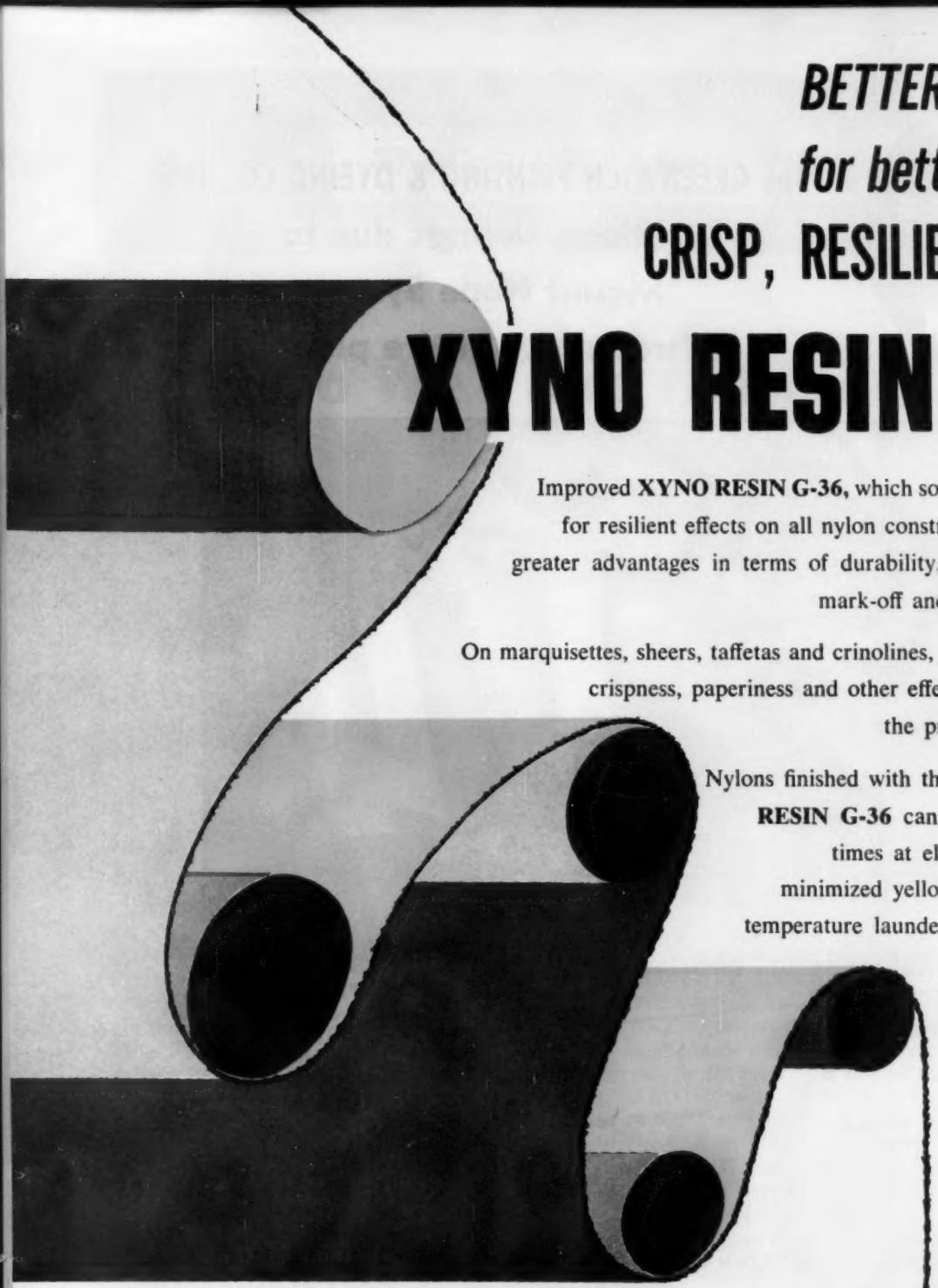
## CRISP, RESILIENT EFFECTS

# XYNO RESIN G-36

Improved **XYNO RESIN G-36,** which so long served as a standard for resilient effects on all nylon constructions, now offers even greater advantages in terms of durability, hand complete lack of mark-off and resistance to yellowing.

On marquisettes, sheers, taffetas and crinolines, all variations of stiffness, crispness, paperiness and other effects can be achieved with the proper G-36 formulations.

Nylons finished with the new, improved **XYNO RESIN G-36** can be given shorter curing times at elevated temperatures with minimized yellowing. Durability to high-temperature laundering is greatly enhanced.



***For samples, specifications, suggested formulations, technical service, get in touch with Onyx today.***

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TEXTILE DIVISION

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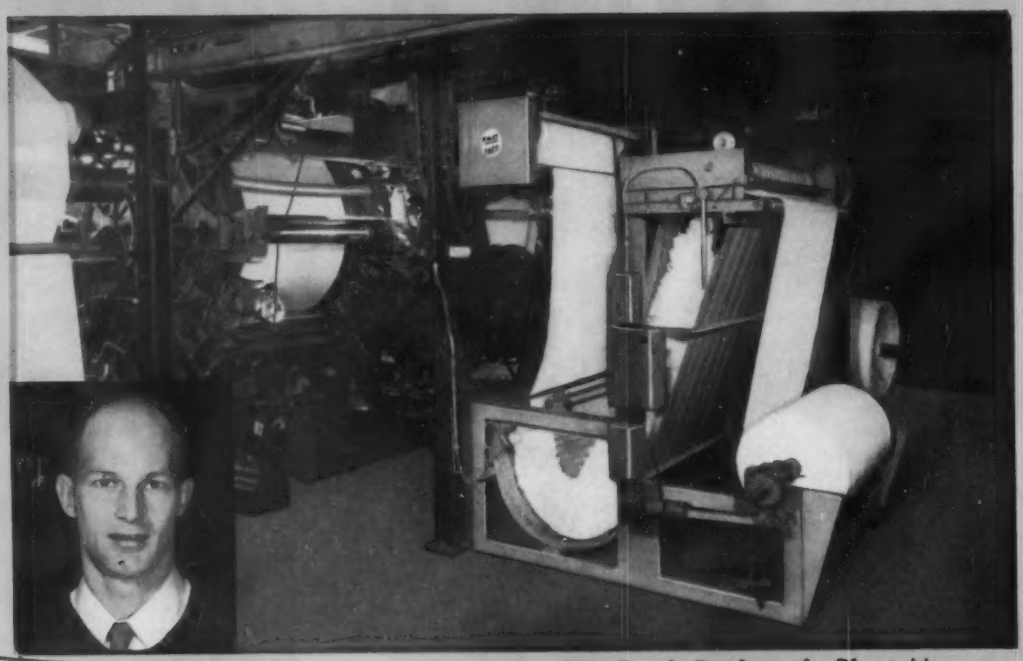
Mount Hope SYSTEM

## The GREENWICH PRINTING & DYEING CO., INC. reflects savings due to Mount Hope System throughout entire plant!



Mr. Frank Duckworth, Plant Manager, shown above with Mount Hope Continuous Roll Feed Installation, says: "We are installing this money-saving equipment on all our machines!"

GREENWICH PRINTING & DYEING CO., INC.

DECEMBER 30, 1954

MR. DOUGLAS ROBERTSON, PRESIDENT
MOUNT HOPE MACHINERY COMPANY
15 FIFTH STREET
TAUNTON, MASSACHUSETTS

DEAR MR. ROBERTSON:

YOU'LL BE PLEASED TO LEARN THAT THE INITIAL MOUNT HOPE CONTINUOUS ROLL FEED SYSTEM WE RECENTLY INSTALLED IN OUR PLANT HAS PROVEN SO SUCCESSFUL THAT WE ARE INSTALLING THIS MONEY-SAVING EQUIPMENT ON ALL OUR MACHINES.

EVEN MORE IMPORTANT THAN THE INCREASED PRODUCTIONS, CONSISTENTLY HIGH QUALITY AND MARKED REDUCTION IN SECONDS, MADE POSSIBLE BY THESE MOUNT HOPE UNITS, IS THE VERSATILITY THEY GIVE US.

OUR ENTIRE PLANT REFLECTS THIS REDUCED COST OF OPERATION THROUGH SAVINGS IN TIME, LABOR, AND OVERALL EFFICIENCY.

SINCERELY YOURS,

GREENWICH PRINTING & DYEING CO., INC.

Frank Duckworth

FD/11

FRANK DUCKWORTH, PLANT ENGINEER

Get the facts now. Start savings in your plant promptly with the Mount Hope Cloth Handling System. Have us survey your plant — at no obligation.

MOUNT HOPE MACHINERY COMPANY

15 FIFTH STREET, TAUNTON, MASS.

*—Originator of Modern Expanders—*
*Leader in Cloth Handling Equipment*

## The LONG-RANGE VIEW

# Do We Take the Whip?

One of the annoying things about the present hullabaloo over Japanese textile competition is what might be called the bogus "moral" climate fanned by the "free traders." They have hopped on the bandwagon of anti-Communism and try to make opposition to them seem almost like unintentional treason.

On p. 93, we present the conflicting views of the U. S. Government, Japan, and U. S. mills. It might be useful to take a quick look here at some of the outsiders who are not concerned in the present tariff negotiations but who, nevertheless, sit on the sidelines and talk prophetically, morally, and loudly about something that is none of their business.

### Who Are the "Free Traders"?

Besides the U. S. State Dept. and the cotton bloc in Congress, both of whose self-interests in low tariffs were discussed here in February, most of the noise for low tariffs or no tariffs has come from two sources: men in other industries and so-called "doctrinaire free traders."

In early February when the House Ways and Means Committee held hearings on HR1, the trade and tariffs bill that textile men fought so bitterly, one of the last men heard by the committee was Charles P. Taft, brother of the late senator. Speaking for the Committee for a National Trade Policy, Mr. Taft said, ". . . the plain fact is it would be far better to lose them [some segments of the textile industry] than to lose Japan to the Communists." Two days later, on Feb. 10, the Ways and Means Committee voted 20 to 5 the way Mr. Taft wanted it to vote.

This Committee for a National Trade Policy is a pressure group organized in 1952 for the express purpose of beating down tariffs. (So far as we can recall, there was little or no talk about losing Japan to the Communists at that time.) Among the members of the board of directors are:

John S. Coleman, chairman of the committee, president of Burroughs Corp. (adding machines, etc.)

George L. Bell, management consultant and lawyer, with many foreign accounts and a Paris office

Harry A. Bullis, chairman of the board, General Mills, Inc. (flour, cereals, etc.)

Thomas B. McCabe, president, Scott Paper Co. (toilet tissue, paper towels, etc.)

Charles H. Percy, president, Bell & Howell (movie cameras)

James S. Schramm, executive vice-president, J. S. Schramm Co. (heavy construction machinery)

And a collection of bankers (Chase National, Bank of America), lawyers (Mr. Taft, Morris S. Rosenthal), and businessmen with government backgrounds (William L. Batt, NATO; Mr. Bullis, U. S. State Dept.; John J. McCloy, once high commissioner of Germany).

The products made by these men are not on the list for tariff slashes. These men almost certainly would gain by giving the U. S. textile market to other countries. So their virtuous talk about saving Japan from the Communists is more than a little sullied by dollar marks in their eyes.

### What Can Textile Men Do?

We are caught in a political squeeze, and obviously self-protection must be along political lines. No one is naive enough to suppose that Mr. Taft and his cohorts, for all their fine talk, have any decisive influence on the question of trade and tariffs. The House Ways and Means Committee, mostly Democrats, voted the way it did because it wanted to, not because of what Mr. Taft said. Members of the committee are politicians; therefore, the deciding influence on this question, as in all of American politics, is the votes of individuals who elect and re-elect politicians to office.

Textile men have missed the boat in not making the two to three million textile workers in the country aware of their power as voters. They have failed to create a textile vote comparable to the cotton-farmer vote, the labor-union vote, etc. In mill after mill, supervisors as high in the scale as superintendents and even top-management men have little or no political awareness. Worse, many of them lightly brush this responsibility aside as of no consequence.

Until textile men wake up to the fact that they are being kicked around for the benefit of people more alert to how business legislation is done in Washington, just that long can we expect to take the whip from people like Mr. Taft and the South's "senior" cotton-farmer Senators and Representatives.

D. M. Thomas

# What a Turbo Stapler does . . .

## for MANAGEMENT—for SALES—for PRODUCTION

The Turbo Stapler uses the Perlok Process to heat-stretch, break and crimp tow into the finest staple. Sliver spins into yarns of unsurpassed evenness and hand, with far fewer preroving operations. The mill-proved advantages for Management, Sales and Production have been demonstrated for over two years . . . check these Stapler benefits for . . .

**MANAGEMENT . . .**

minimum capital investment — doubling and drafting operations drastically cut . . . quick investment returns — production records show that the average Stapler pays for itself in three months . . . requires little floor space . . . offers tremendous production flexibility — to meet changing market conditions and new fibers.

**SALES . . .**

Yarns can be "tailored" to the customer's specifications — choice of fiber, denier, crimp and staple length . . . uniform quality from lot to lot . . . outstanding evenness of yarns . . . low manufacturing costs help meet or beat competitor's prices.

**PRODUCTION . . .**

minimum daily maintenance . . . quick changeover to different fibers, deniers, staple lengths or crimp . . . all parts readily accessible through openside construction . . . simplicity of operation — operators quickly and easily trained.

**Booths 59-60**

**KNITTING ARTS SHOW**

TURBO
SINCE 1929

We'd like to give *you* facts and figures . . . for Management, Sales or Production . . . here at Turbo, in your plant, or in a Turbo-equipped mill.

**TURBO MACHINE COMPANY**

**Lansdale, Penna., U.S.A.**

Manufacturers of precision Heat-Setting Machinery, Crimpers, Crimp Setting Equipment, and Tow Processing Equipment

*FINANCIAL AID TO HIGHER EDUCATION*

# Our Colleges and Universities Are Living on Borrowed Time

## . . . time borrowed from underpaid faculty members

The chart on this page tells a story of profound importance to every American. It is the story of the financial beating our college and university faculty members have been taking in the past 14 war and postwar years.

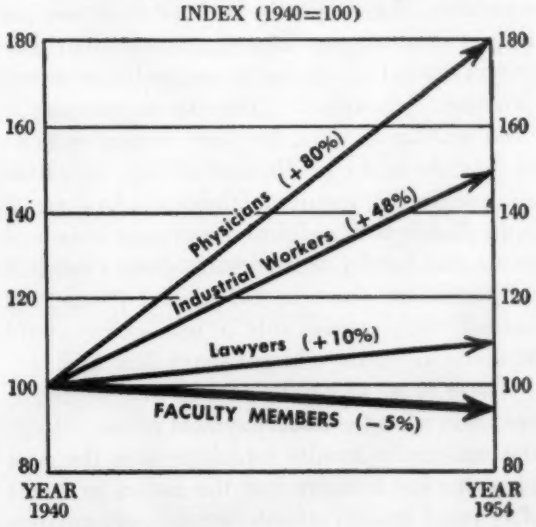
On the whole, this span of 14 years has been one of great and growing prosperity. But, as the chart shows, our college and university faculty members have, as a group, had less than no share in it.

**During this period, from 1940 through 1954, the real income of the average industrial worker (that is, what his wages would purchase in goods and services) has increased by almost one-half. Among professional groups, physicians have enjoyed an increase of about 80 per cent in their real income. Lawyers, far less favored financially, have had an increase of about 10 per cent. But faculty members have not only had no increase at all; over these years of prosperity their average real income has fallen by 5 per cent. These figures do not take account of the increase in taxes since 1940.**

### Senior Teachers Hardest Hit

These figures are, of course, averages. For some groups of faculty members it has been better; for others worse. It has been particularly hard on senior faculty members. Between 1941 and 1953 their salaries lost about 8 per cent of their purchasing power. Being deeply committed to their careers they could not respond to alternative employment opportunities as readily as could their junior colleagues. For junior faculty members there was some increase in real income between 1941 and 1953 but only about half as much as the average for the nation.

**What's Happened to College Faculty Salaries***




* Real Income before Taxes.

Source: Council for Financial Aid to Education; U. S. Dep't of Commerce; U. S. Dep't of Labor.

## Public Colleges Fare Better

There are also marked differences in the average financial reward received by faculty members in different types of colleges and universities. A recent study by the Council for Financial Aid to Education indicates that, in the last academic year, 1953-1954, teachers in privately endowed, independent colleges and universities were paid an average salary about $1000 less than that paid to faculty members in tax-supported institutions. The same study indicates that salaries far below the average are especially common for faculty members in the small private liberal arts colleges. This study found that during the last academic year the average salary of all college and university faculty members was about $4700.

The special difficulties under which the independent colleges and universities, and particularly the independent liberal arts colleges, are laboring to get back on their feet financially have been discussed in previous editorials in this series. These difficulties underline the need of special help for these institutions to which business firms are now contributing in increasing volume. However, the problem of providing better salaries is not peculiar to any particular type of institution.

## Faculty Members Not Greedy

It is not easy to prescribe a precise standard of fair pay for college and university faculty members. This is partly because they put less weight relatively on money rewards than they put on rewards of scholarly accomplishment and prestige. Consequently, they have consistently been willing to work for very modest salaries in relation to the intellectual ability, education and application required. Obviously, however, it is the dictate both of fairness and good judgment to see that faculty members are given a roughly proportionate share in the general prosperity. Indeed, their crucial role in our society could be made to justify a larger share than this.

There is no way to know with any degree of precision what the underpayment of our college and university faculty members over the past 14 years has actually cost the nation in terms of reduced quality of intellectual performance of those institutions. One reason is that the damage has been minimized by the devoted services of many faculty members who have loyally stuck to their jobs in spite of the great financial discouragement.

**It is obvious, however, that, if no grave deterioration in the intellectual performance of our colleges and universities has occurred so far, it is because we have been living on borrowed time. It is time borrowed from faculty members who have, in effect, been subsidizing these institutions by their financial sacrifice. This arrangement is not only a menace to the cultural and intellectual life of the nation, it is also a menace to our national security in a time when successful national survival may well depend in peculiar degree on the full development and utilization of our intellectual resources. We depend on our college and university faculties pre-eminently to provide this development. Adequate financial reward for such service is an elementary form of national insurance.**

Many of our colleges and universities are working hard to improve the financial lot of their faculty members. Business firms are also playing an increasing role of providing the necessary financial assistance. The methods being used by business for this purpose will be the subject of another editorial in this series. However, **vastly more must be done, and quickly, to stop the financial beating being taken by our college and university faculty members if the nation's welfare and safety are to be properly protected.**

*This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments that are of particular concern to the business and professional community served by our industrial and technical publications.*

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Donald C. McGraw

PRESIDENT

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# TEXTILE TARIFFS—
## A Three-Way Battle

The international conference on tariffs, in Geneva, Switzerland, to open textile markets for Japan, kicked off a furore. Japanese textile competition and the U. S. Government's announced intention to slash textile tariffs drew fire from all textile quarters.

From the time the Government announced its intention to negotiate a whole list of textile products, textile organizations waged verbal battle against tariff cuts. When Congress took up HR 1, which sets up the foreign-trade and tariff machinery, it was the textile industry that lead the fight against it.

In an effort to bring some order to the chaos created by the sound and fury about tariffs, Japan, and the threat of Communism, TEXTILE WORLD presents on these pages a round-up of viewpoints on this question. The report includes—

- **Washington**—What the U. S. Government is trying to do
- **Tokyo**—Why Japan has to find textile markets
- **U. S. Textile Industry**—Why U. S. mill men oppose tariff cuts
- **"What's the Answer?"**—TW's analysis of what should be done

TEXTILE TARIFFS—

# "Open the Door for Japan" Is Problem Facing Japan

**The U. S. Government at present is firmly determined to give Japan a bigger share of the U. S. market. As the Administration sees it—**

- **Japan is the vital link in the U. S.'s defense in the Far East**
- **Japan must trade with the Free World or join Communist China**
- **The U. S. must lead the way in opening markets to Japan**

**By BOYD FRANCE,** McGraw-Hill Washington Bureau

THE IMPORTANCE TO THE FREE WORLD of a strong Japan dominates the Administration's thinking on the Japanese tariff problem. U. S. officals see our stake in Japan this way:

Japan is the hinge of our whole Far Eastern defense barrier. It is the defensive shield for Korea, Formosa, and the Philippines. It contains more than 80-million people and the largest industrial complex in the Far East.

It has no middle choice between the Free World and the Communist World. As a trading nation, it must align itself with one or the other to live. It cannot hope for neutrality based upon self-sufficiency. If it is forced to choose economic alignment with Red China, the whole of Free Asia from Korea to Pakistan, with a population of 600-million, would suffer a military, economic, and political shock that could well topple the whole works into the Communist quicksand.

If the U. S. reneged on its economic commitments to Japan, it would be a signal to all Far Eastern peoples that we would not back them up and that they might as well seek the best terms they can get from Peking.

The mere addition of Japan's industrial and manpower strength to Red China's potential would swing the economic balances of power fatally against Free Asia and would clinch the success of the Red revolution in China.

## U. S. Won't Risk Losing Japan

Holding West Germany and Japan out of the Communist maelstrom have been the two outstanding victories of the Cold War. They have kept the preponderance of economic power on the Free World side. To risk tossing them away now for 30 shillings' worth of tariffs would be inconceivable, in the view of U. S. officials.

Yet, that is the risk and the choice involved in the tariff issue, the Administration believes. With many of its prewar markets gone, its colonial empire gone, and its population skyrocketing, Japan is going deeper and deeper into the red. U. S. military expenditures have kept the books balanced in recent years, but they are tapering off fast. U. S. officials are convinced that if Japan can't increase its exports dramatically to Free World markets, it will be forced sooner or later to tie its economy to Red China, to revert to the unscrupulous trading tactics of prewar days, or as a last resort to try to break out of its islands by new military conquests.

## U. S. Must Take the Lead

The U. S., as Japan's protector, must take the lead in any moves to jimmy Japanese goods back into world markets. Officials point out that we have less to fear from Japanese competition than has Britain, for example, who is heavily dependent upon Far Eastern markets in which the Japanese are relatively competitive.

Expanding Japanese trade with Red China is no out, according to U. S. officials. They see Japanese-Chinese trade as an all-or-nothing proposition. The prewar pattern of trade between Japan and China has been shattered forever. The Japanese no longer can hope to get valuable raw materials from China in exchange for cheap consumer goods. The Chinese are using their own raw materials, and Chinese consumers are doing without. The only way Japan could expand its trade with China substantially would be to gear its economy tightly into the highly planned economy of the new China. This would imply or force Communist political domination.

## U. S. Exports Overshadow Imports

The U. S. has an economic stake in the Japanese tariff negotiations as well. Japan is an important market for our exports. We exported goods worth $757.5-million to Japan in 1953 and imported only $260-million worth. Comparable figures for the first six months of 1954 (latest available) were $434-million and $145-million, respectively.

The Japanese tariff structure is relatively high. Lowering it, plus giving Japan the chance to earn more dollars in Free World markets, would create a steadily expanding market in Japan for U. S. products.

It's clear that the Administration means business from the list of products on which it is considering tariff concessions. Over-all, these products comprise 55.2% by value of Japan's exports to the U. S. In other words, these are products on which Japan does a substantial business here and which compete importantly in the domestic market. Annual imports of the textile items up for tariff revision alone add up to well over $10-million. The President still has considerable statutory authority left to reduce duties on most of the products on the bargaining list.

## Protests Are Hot

The Japanese tariff issue is one of the hottest in tariff-cutting history. There is a lot of pent-up fear and emo-

tion behind the dry statistical protests that have been made against the proposed cuts. The dragon of Japanese competition, backed by teeming masses of underpaid, underfed workers, traditionally has been the Number One bugaboo of protectionists. Memories of cut-throat Japanese prewar trading tactics have left scars in the minds of many American businessmen.

Japanese competition is no paper dragon either to many of the industries that are fighting tariff reductions. For one thing, the U. S. never has had a trade agreement with Japan. War tensions started building up before Tokyo had a chance to cash in on the Reciprocal Trade Act of 1934.

Businessmen potentially threatened by Japanese competition benefited from the protection of the Smoot-Hawley tariff schedules long after their colleagues in other sectors of industry were forced by postwar tariff slashes to face up to foreign competition. So the President's statutory power to reduce tariffs on Japanese imports is substantially intact. On many items, the Administration has the authority to cut duties as much as 75%—potentially a life or death margin for some American industries.

### Other Industries Are Worried

Some of the industries whose products may be put on the tariff auction block are in shaky shape already. They see the threat of increased Japanese competition as the last twist of the knife. Textile manufacturers are not the only ones in trouble. The U. S. tuna fleet, for example, has had rough sailing for years. The competitive position of a large segment of the china, earthenware, pottery, and crockery industry is as fragile as its wares.

The Geneva tariff negotiations also worried a number of industries that aren't directly vulnerable to Japanese competition. That's because the Administration is in favor of making concessions on a fat package of products to third countries in exchange for concessions from them to Japan. Such concessions are being considered, for example, on a long list of coal-tar intermediates. This one has the synthetic organic chemical industry up in arms. The industry fears that its ancient German rival may sneak back into the U. S. market.

But the basic underlying fact is that Japan, the former Number One commercial rival and military enemy, has become our major ally in the Pacific. The U. S. Government will do everything in its power to open world and U. S. markets to its new ally.

# "Increase Exports or . . .?" Is Problem Facing Japan

**Adverse economic conditions are forcing Japan to export, starve, or join the Communist world. Here are some facts—**

- **Japan's hopes to improve trade are tied to GATT**
- **Cartels now are being considered by the Diet**
- **Trade with Red China quadrupled last year**

**By DAN KURZMAN,** McGraw-Hill World News, Tokyo

JAPAN'S TRADE HOPES for the future are tied to a large degree to its anticipation of membership in the General Agreement on Tariffs and Trade (GATT) organization. Japanese officials are confident that the country will be voted into the organization sooner or later.

Until late 1954, the Japanese economic situation was extremely adverse, largely due to an export paralysis. But, in recent months, the trade balance suddenly has turned favorable. Stock-market quotations have been steadily on the rise since December, and they were given an extra boost by the change of leadership in Soviet Russia.

A number of factors contributed to Japan's sudden export boom. The government's deflationary policies, especially tight money, have checked price rises. Bullish tendencies of the world economy permit Japan to compete in world markets. The Japanese Government has instituted disguised subsidy systems and other artificial incentives to prime the export pump.

### Cartels Are Considered

The Japanese Diet is scheduled to consider soon the question of cartels for exporters, already recommended by the Fair Trade Commission. Small and medium business cartels, producing goods for internal consumption, have been operating for several years.

The Japanese Government realizes that too much credit for the present favorable trade balance must not be given to artificial incentives. Foreign traders severely criticize the "link" system that permits manufacturers to import goods up to a certain percentage of their export volumes and to dump them at low prices. However, with GATT membership dangling before their trade-hungry eyes, it is understood that Japanese leaders already have decided to reduce link-incentive figures within the next few months, possibly a first step toward abolishing the system entirely. They point out that export increases might well permit such a step. The cartel situation is not so clear, some foreign observers fear that government-supervised cartels might get out of hand and return to prewar practices.

## What's Happening to Japan's Textile Production and Exports

| Units: yarn, 1000 lbs.; fabrics, 1000 sq. yds.; value, $1,000 | 1953 | | | | |
|---|---|---|---|---|---|
| | Production | Exports | Export value | Average unit price for export | Percentage ratio of exports to production |
| Cotton and cotton-rayon yarns | 913,737 | 19,731 | 14,128 | 72 | 2% |
| Cotton fabrics | 2,810,577 | 916,658 | 180,419 | 20 | 33 |
| Silk yarn | 33,095 | 9,697 | 44,325 | 457 | 29 |
| Silk fabrics | 170,000 | 17,067 | 8,740 | 51 | 10 |
| Spun-silk yarn | 4,483 | 581 | 958 | 165 | 13 |
| Rayon yarn | 163,262 | 15,994 | 9,924 | 62 | 10 |
| Spun-rayon yarn | 250,320 | 25,767 | 15,821 | 61 | 10 |
| Rayon fabrics | 575,375 | 277,993 | 53,544 | 19 | 48 |
| Spun-rayon fabrics | 504,084 | 146,530 | 29,458 | 20 | 29 |
| Spun-rayon fiber | 357,529 | 597 | 189 | 32 | — |
| Wool yarn | 186,628 | 3,237 | ——— | 220 | 2 |
| Wool fabrics | 167,588 | 4,556 | ——— | — | 3 |
| Bast yarn | 95,171 | 503 | 1,477 | | 1 |
| Bast fabrics | 126,769 | 877 | | | 1 |
| Synthetic fiber | 16,442 | | 294 | | |
| Synthetic-fiber fabrics | 22,157 | | | | |
| Textile finished products | | | 73,534 | | |
| Total | | | 448,425 | | |

Japan had a favorable trade balance of about $1-million in 1954. Of the nation's total national income of $17,183-million, exports amounted to $2,209-million, or about 13%. This is a postwar high and a gain of more than 30% over 1953. About 15% of 1954 exports (a $35-million increase over 1953) went to the United States. Textile products constituted about 30% of 1954 exports.

### Mills Face Bankruptcy

Despite increased exports and bright prospects for further increases, business is not booming in Japan. The government's deflationary policies have had a disruptive effect on the economy. Numerous businesses, including 650 textile firms—more than double the 1953 figure—were forced into bankruptcy last year. Wages have been more or less frozen. Unemployment has skyrocketed, reaching a postwar peak of 710,000 last August, or 165% higher than the previous August. The situation has eased somewhat since then, but unemployment is still 70% higher than in 1953. In addition, there are hundreds of thousands who live on a bare subsistence level.

The Japanese Government's desire for freer trade probably will be reflected in its 1955 import program, which is not likely to work to the advantage of the United States. Imports, expected to be slightly more this year, probably will come less from the dollar zone and more from the sterling areas and Communist China. This shift may be caused by Japan's huge import surplus from the United States that averages $500-million. In the past this unfavorable balance largely has been offset by American military procurements in Japan, but this extra source of revenue is now dwindling.

Japan feels more strongly than ever that for the long haul it can regain its prosperity only by winning back its natural markets in Asia. Progress is being made. Trade with Burma is improving as the result of a recent war-reparations agreement, and Japan hopes to conclude as soon as possible reparation accords with the Philippines and Indonesia so that trade with these countries can be increased.

### Japan Seeks China Trade

Japan is eying with great enthusiasm the prospects of expanded trade with Communist China. It well remembers that between 1934 and 1936, exports to China averaged $170-million, or about 18% of its total export volume. Japan does not hope to equal this figure in the future because of wartime losses in Manchuria and because of the difficulty of doing business with the Red Chinese government. Still, Japan will strive to increase its business with China to the greatest possible degree consistent with its commitments to the United States. For example, a 35-man Red Chinese trade mission was scheduled to visit Japan in March to negotiate trade accords with Japanese business associations.

Japan exported about $19-million worth of goods to Red China in 1954, including $3.5-million worth of textiles, mainly rayon and cotton yarns. Other exports included ammonium sulfates, dyes, medical supplies, and superphosphates. In contrast, total Japanese exports to the Chinese mainland in 1953 amounted to only $4.5-million.

The export spurt to China last year was caused in part by an agreement that direct account settlements could be made between the Bank of Tokyo and Chinese banks and by the easing of Japanese regulations on barter transactions. The Japanese Government hopes to double its exports to Red China this year. Imports last year from Red China amounted to

| 1954 (Jan. through Nov.) | | | | | | |
|---|---|---|---|---|---|---|
| Production | Exports | Export value | Average unit price for export | Percentage ratio of exports to production | 1955 Export Targets | |
| | | | | | Quantity | Value |
| 939,842 | 24,609 | 18,780 | 76 | 3% | 27,400 | 20,821 |
| 2,914,190 | 1,169,989 | 231,365 | 20 | 40 | 1,035,000 | 207,843 |
| 30,670 | 10,106 | 42,674 | 422 | 30 | | 49,300 |
| 163,377 | 22,379 | 11,894 | 53 | 13 | | 16,200 |
| 3,505 | 233 | 509 | 218 | 7 | | 790 |
| 168,513 | 16,065 | 9,057 | 56 | 10 | 19,500 | 10,590 |
| 292,179 | 32,786 | 16,504 | 50 | 11 | 33,000 | 14,850 |
| 602,263 | 290,735 | 56,483 | 19 | 48 | 330,000 | 62,700 |
| 584,195 | 256,372 | 45,985 | 18 | 44 | 370,000 | 66,600 |
| 406,511 | 1,836 | 500 | 28 | 1 | 7,500 | 1,950 |
| 154,627 | 10,181 | 22,537 | 220 | 7 | | 24,350 |
| 139,169 | 15,933 | | | | | 20,130 |
| 86,593 | | | | | | 8,000 |
| 115,572 | | 5,888 | | | | |
| 23,166 | | 870 | | | | 8,446 |
| 27,560 | | | | | | |
| | | 79,488 | | | | 105,000 |
| Total..... | | 558,466 | | | | 617,510 |

slightly more than $40-million and consisted largely of rice, salt, soya beans, and coal.

### Russia Desires Barter

Japan wants to increase its trade with the Soviet Union. A provisional contract calling for an $80-million two-way barter agreement was concluded last May between a group of Japanese firms and the Soviet Mission in Tokyo. Although it is recognized that such a goal is virtually impossible to achieve fully, a number of small Japanese vessels recently were exchanged for Russian lumber, petroleum, and coal.

Trade with other Communist countries is relatively small. Despite efforts to tighten trade ties with the Communist world, Japan does not lean politically toward that world. The three largest political parties in Japan – Democratic, Liberal, and Right-Wing Socialist – are said to be violently anti-Communist. Japan is still suffering, however, from an occupation complex and thinks that it is good business to "normalize" relations with the Communist countries.

While Japan obviously hopes over a period of time to increase its trade in Asia and with the Communist countries, it realizes that GATT offers the best immediate opportunities to increase its exports. Textile profits represent about 15% of Japan's total industrial earnings.

The table accompanying this article gives a statistical picture of what has happened to textile production and export in Japan during the last two years. However, it does not tell the whole story.

For example, Japan's exports of cotton fabrics last year not only set a postwar record for the country but exceeded the exports registered by any country in the world. Shipments to the dollar area totaled 248,236-thousand sq.yds.; to the sterling area, 536,787-thousand sq.yds.; and to the open-account area, 493,098-thousand sq.yds. These shipments represent increases over the preceding year despite the fact that the general export price index was 3.1% lower than 1953. The cotton index was down 1%, and the total textiles index was down 4%.

Japan sold 28% of its total textile exports, valued at $67,339-thousand, to the United States in 1954. This amounted to some 50-million yds. of cotton fabrics, an increase of 1,200% in three years. What is sometimes overlooked is the fact that Japan had an unfavorable trade balance of about $36-million between raw-cotton imports and cotton-fabric exports last year.

Although Japan has high hopes of increasing its trade in traditional markets, the cold fact is that at present all exports, including textiles, show a slight downward trend in these markets. This means that an all-out effort will be made to find new markets and increase sales in the U. S. and other countries in a position to purchase higher-quality goods. The U. S. is particularly vulnerable because of its favorable trade balance.

### Textile Wages Are Low

The chances that Japan will continue to increase its exports of textiles are more than good because of its low manufacturing costs due primarily to a large surplus of cheap labor. There is a never-ending supply of young girls from the country villages who are happy to work for $14 to $28 per month, plus food, housing, and social-welfare benefits. About 80% of Japanese textile workers are women, which accounts for the fact that textile wages are only 60% of the average for all industrial workers. They earn, however, from 10 to 15% more than women working in other industries.

TEXTILE TARIFFS —

# "We Are Not Expendable," U. S. Mills Insist

**Fighting back against the U. S. Government's avowed purpose of giving a hunk of the U. S. textile market to Japan, U. S. mills contend that—**

- **Textile tariffs, already reduced 37%, are too low now; further cuts would be folly**
- **Low wage rates in Japan are the critical factor**
- **Killing off U. S. mills is not the answer**

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

AMERICAN TEXTILE MANUFACTURERS believe that present tariffs are entirely too low. Textile tariffs already have been reduced an average of 37% in recent years. If Japan decides to export more goods to the U. S., present tariff protection cannot prevent these goods from entering the country.

Although the amounts imported recently have been relatively small, they doubled in the fall of 1954; and American manufacturers have not forgotten the influx of cheap cottons from Japan that began around 1936. Cordell Hull put a stop to this trouble, but not before the industry plunged into a bad depression. Some manufacturers blame Japanese imports directly for the troubles of 1938.

There is no doubt that a 15% reduction in present tariff schedules would hurt many segments of the textile industry. For example, at the time of the tariff hearings in December the mill margin of 26.6¢ per lb. for gray goods was the lowest since 1952. At the same time, Japanese 38-in., 133x72, 3.75-yd. combed broadcloth was selling at 22½¢ (cost, insurance, and freight included) as compared with our price of 26¾¢. Japanese 39-in. 80x80 print cloth was bringing about 16¢; U. S. price was 18½ to 18¾¢.

The differential was much greater between the higher-priced fabrics; Japanese velveteen was 75¢ as against $1.45 for the U. S. product. (In the last instance, the U. S. fabric was of somewhat better quality.) Any tariff reduction would further increase these price differences.

## Textiles Are Singled Out

American textile manufacturers can see no logical reason for placing the jobs and well-being of 2½-million textile workers in the hands of the State Dept.

The industry cannot see any justice in singling out textiles for special persecution. Spokesmen cite the case of the giant iron and steel industry, which comes under Section 111 of HR1. Items listed are confined to such things as "thumb tacks, needles, nail files, surgical instruments, shotguns, pistols, and aluminum foil not more than 6/1000 in. in thickness." Yet, almost 90% of the output of the textile industry stands to be affected by proposed tariff changes.

It is true that segments of the ceramic industry and the chemical industry may suffer substantially; but textile men still ask why scores of giant industries, such as the automobile industry, were not even mentioned in the proposal. They wryly point out that manufacturers of bicycle bells are getting the works along with textiles.

The U. S. textile industry always has had its ups and downs, but operators feel that the government is trying to increase its natural miseries. It is common knowledge that the industry has operated at an unsatisfactory level for the last two years and that in the last 18 months, 150,000 jobs have vanished. Since 1951, cotton consumption has dropped 22%, spindle activity has declined 16%, and production is off 13.6%. Sales of broad woven goods dropped 30.5% during this period.

Since 1950, per-capita consumption of textiles has declined by the following significant amounts: cotton, 18.3%; synthetic fibers, 17.6%; and wool, 40.9%. The average for all fibers is 20.6%.

The wool branch of the industry is especially vulnerable because of its higher wage rate. Other branches that will be affected violently are hose, half-hose, and all kinds of knitted or crocheted outerwear.

## How Wage Rates Compare

The American textile industry has the highest wage rates in the world, about 10 times that of Japan and three times that of Western Europe.

Comparative wage rates for major cotton-textile-manufacturing countries, on an average hourly basis, is:

| | |
|---|---|
| United States | $1.30 |
| United Kingdom | 40¢ |
| France | 38¢ |
| Italy | 30¢ (Est.) |
| Germany | 31.7¢ |
| Japan | 13.6¢ |

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More than 25 textile trade associations, assisted by platoons of economists, engineers, and Government representatives from textile states have joined hands to fight HR1. Bitter protests were made to the Tariff Commission and later to House and Senate committees. Chief spokesmen were: **Dr. Claudius T. Murchison,** economic adviser to the American Cotton Manufacturers Institute; **J. Craig Smith,** president of ACMI; **William F. Sullivan,** president of the Northern Textile Association; **Seabury Stanton,** chairman of NTA; **Seymour Harris,** Harvard economist, representing the six New England governors; **W. Ray Bell,** president of the Cotton Textile Merchants' Association of New York; **Edward Wilkinson,** executive vice president, National Association of Wool Manufacturers; and **Thomas H. West,** president, Draper Corp.

Much of the information in this article is based on material presented before the Tariff Commission.

India .....9.5¢

Such wage differentials make it possible for any country in the world to undersell U. S. mills in the export market, as diminishing U. S. exports indicate. About the only textile customers U. S. mills have left are Canada, Cuba, the Philippines, South Africa, and some of the Caribbean islands.

Loss of exports is due in part to the high cost of textile manufacturing in the U. S. and in part to import restrictions established by Western Europe and other parts of the world. In the face of this freeze-out, U. S. mills can see no reason for letting down the bars to cheap goods from these countries and Japan.

### Japan Expects "Improvement"

Japan has interpreted the General Agreement on Tariffs and Trade (GATT) talks as an open invitation to increase exports to the U. S. In fact, one Japanese trade publication, the *Kureha Textile Review*, Nov. 15, 1954, said, "Now, Japan wishes earnestly to participate in GATT so as to improve the undesirous conditions on export business. Cotton products are the most important item in export."

It is estimated that imports from Japan are now coming in at the rate of 150-million yds. annually, based on an analysis of shipments received during a nine-week period last fall. This rate is two to four times as high as in recent years.

Technologically, Japanese mills are as good as U. S. mills, and many of them are newer. At the end of World War II, spindleage was less than 1½-million. Since that time, spindleage has grown to 8½-million.

Raw materials cost about the same in Japan, the United States, and Western Europe. Gross inequalities in shipping rates make American manufacturers see red. According to J. Craig Smith, president of the American Cotton Manufacturers Institute, it costs $9 to ship a bale of cotton from Houston, Tex., to Kobe, Japan; it costs exactly the same to ship a bale from Houston to Sylacauga, Ala. Freight cost is even less when cotton is shipped to Japan from California, now the third-largest cotton-producing state.

American textile men who fought HR-1 so long and bitterly undoubtedly will come up with many more arguments and objections to the bill between now and the expiration of the present law HR1 is proposed to replace. They do not like to be treated by the government as an "expendable" industry. However, the need for strengthening Japan's economy is recognized, the loss of Japan's Eastern markets is understood, and the Communist threat is not underestimated.

### Industry Offers Solution

The industry takes the stand, however, that HR1 is not the answer. Japan's problems and the world-trade problem cannot be separated. The solution lies in restoring natural markets, especially in Japan's trading area, and in the expanded consumption of goods everywhere.

Manufacturers have become tired of hearing that a billion people get along on 6 to 12 yds. of cloth per year, in contrast to 75 yds. per person in the United States, and think that the Government should concentrate on stimulating the flow of goods into these destitute areas instead of encouraging our former enemy to dump surpluses into our economy.

Trade restrictions and cartels should be attacked, they say; not our own industry.

## A TW Editorial

# *What's the Answer?*

**Giving Japan a slice of the U. S. textile market is only a shot-in-the-arm treatment. To really solve Japan's problems, the U. S. should—**

- **Help diversify Japan's industries**
- **Channel excess textile products to areas where they are needed**
- **Increase world textile consumption**

THE VIEWPOINTS presented on the foregoing pages seem poles apart; yet, anyone who half tries can be deeply sympathetic with any one or all of them.

The U. S. State Dept. is trying in all sincerity to do a good job for the American people and, because of its forced role of leadership, for the rest of the Free World. Japan is in trouble and must find some way out. The U. S. textile industry is sincerely concerned about the welfare of the several million of its people.

Blunders have been made, and the frantic hurrying-about now going on in regard to tariffs is largely a cover-up, or perhaps closing the barn door after the horse is gone.

Everyone knows—and nobody knows it better than the U. S. State Dept. and Japan—that lowering U. S. tariffs is no solution to Japan's problem. It is a temporary stop-gap, a shot in the arm, a gift to ease the pressure on the Japanese government. Japan is not simple enough to build any great future plans on anything so whimsical and so subject to change.

So it seems appropriate that we take a look at some of the angles that, in the heat of the hurrying-about, are apt to be overlooked.

### Some of the Blunders—

To say that U. S. foreign policy in the Far East has been wishy-washy is a very mild way of putting it. We

all saw the U. S. Government play footsy with the Nationalist Government of China in its war against Communism. Suddenly there was an about-face, China was given to the Communists, and the Nationalist forces were put on Formosa and told to stay there and keep quiet. With encouragement by the negative attitude of the U. S., the Communists acted up in Korea. There was another about-face; the U. S. suddenly decided to act. Now, the Chinese Nationalist Government on Formosa is in the U. S. footsy game again.

With each of these changes, the U. S. drew up a new so-called "defense line." At the moment, that line is said to hinge on Japan. Who knows but that tomorrow morning there will be a new line?

How does that affect U. S. textile mills?

This off-again, on-again State Dept. controls U. S. textile tariffs. At the moment, its so-called "defense line" seems to it to necessitate giving part of the U. S. textile market to Japan to oil the hinge of "the line."

### The Postwar Mistake—

At the end of World War II, the textile industry of Japan was nearly gone. All Japanese industry was nearly gone. The U. S. set about helping Japan rebuild, and one of the fastest and largest rebuilding jobs was in the textile industry.

It would seem that about that time someone would have taken a look around to see what rebuilding needed to be done for the future, rather than fire in and rebuild on the basis of the past. Japan's prewar textile capacity was far too great for her markets; and her two biggest markets, China and India, were slipping away.

Why did the big planners not take that into consideration? Why did they not try to develop industries that are not already glutted world-wide—such as automobiles, electronics, home appliances?

The textile industry, with food and shelter, is one of the three great basic industries. Wherever people are, they must have those three things. Sooner or later, in one way or another, every country must arrange for a never-failing source for them. Wherever possible, self-sufficiency is the only sensible course. No right-thinking people is going to risk being caught short of food, clothing, and shelter by war or by the exigencies of foreign trade.

Therefore, in an era of growing industrialism and until war and nationalism are extinct, textile exports are a temporary business for any country. They will fail as rapidly as countries become sufficiently industrialized to assure themselves of clothing by developing their own textile industries.

The U. S. textile industry is a home industry built up to supply the home market. Normally, something like 95% of the mill products made in this country are consumed here. That represents a healthy situation and the only one that makes sense. To jeopardize a never-failing source for textile products for the U. S. population is going backwards industrially and is running the risk of subjecting the U. S. population to want in one of the three great essentials of life.

There is no sort of guarantee against war. Without a strong, healthy, ample textile industry, the U. S. will suffer if war comes.

### What About Japan?

Obviously, Japan's straitened conditions must be eased. Textile men are as concerned about the threat of Communism as anyone, including the State Dept. and loud-talking people in other industries. It is extremely unfortunate that the big postwar planners stupidly misplanned things; but they did, and we have to take it from there.

Some things that the U. S. could do to help correct the situation now are:

1. Fix textile tariffs realistically on the basis of U. S. needs for imports.
2. Help (by subsidy, grant, or loan) Japan diversify her industries so that her well-being is less dependent on exporting great amounts of a few types of products.
3. Help (by subsidy, if necessary) channel excess Japanese textile products to world areas where they are direly needed.
4. Actively help increase the use of textile products in all countries, even Western European countries where consumption is now low.

### There Are Advantages

Admittedly, such things as subsidies, grants, and loans are also stop-gap measures; but in this case they have advantages over the proposed lowering of tariffs to give Japan some of the U. S. textile market. First, they spread the burden of Japanese aid to everyone, rather than forcing a few U. S. industries, primarily the textile industry, to bear the whole burden. Second, they do not disrupt a major segment of American industry, kill off plants, and displace families. Third, they do not reduce a great basic U. S. industry below a normal, sane level for self-sufficiency in case of an emergency. Fourth, they do not tend to lower the U. S. standard of living to raise the standard somewhere else.

On the positive side, the suggestions listed, even if they are sparked by subsidies or grants, would result in far-more-permanent and satisfactory solutions to Japan's economic problems.

Meanwhile, the first step in solving the tariff quandary should be to remove tariffs from control by the State Dept. So long as that department is free to cover up its blunders by playing football with whole segments of the U. S. economy, just that long will the U. S. people be buffeted by harrassed opportunism.

D. M. Thomas

# What Makes You Tick?

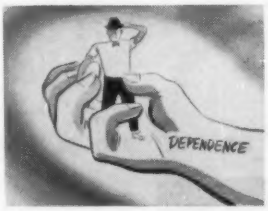
► The accompanying series of drawings and captions can give you insight into not only why you behave as you do but why your workers, other supervisors, your wife and children—anybody!—behave as they do.

► What you want to know is how to understand workers. Well, workers are just like you. Take a look at yourself: if you recognize yourself, you will also recognize your workers.

By **THOMAS B. WINSTON,** Assistant Editor, TEXTILE WORLD

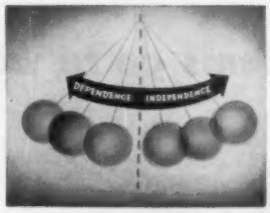
## You have two conflicting sides . . .

**Dependence Vs. Independence = Conflict = Battling yourself**

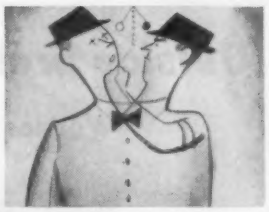



**ONE SIDE OF YOU** wants approval. You want to be liked; you want to belong to a group; you want to cooperate. This need for approval makes you want to play safe and not take chances. You don't want to be criticized. You look to other people for approval, and you depend on them for approval.

**THE OTHER SIDE OF YOU** doesn't want approval. You want to act like you feel like acting; you want to say what comes to your mind; you want to be self-sufficient. This side makes you feel important in your own eyes, and you want to dominate other people and disregard their feelings.




**WHICH WAY TO GO?** If you are too dependent, you feel frustrated; but if you are too independent, you are criticized and lose friends. You can't escape this basic conflict because you can't have both ways at the same time. You have to learn for yourself how to resolve these conflicting emotions.



**TO AVOID CONFLICTS,** you try to conceal them from yourself. You lie to yourself; you look for excuses; you put the blame on others. You build up a pretty picture of yourself. But if you can recognize that you have these emotional conflicts, you can appreciate that other people have the same conflicts.

*The information in this article was supplied by Dr. Nathaniel Cantor, Human Relations for Industry, Buffalo, N. Y. The illustrations are panels from a film-strip series put out by that company, for use in industrial training programs.*

## *Four things that you want . . .*

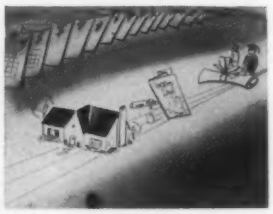
### Feeling of importance

AS AN INDIVIDUAL, you want to be understood and respected by other people. You want attention; you want your opinions to count; you want other people to share your interests. Your name is important to you. If you are misunderstood, you feel rejected. But if you are appreciated, you feel good inside.

### Self-respect

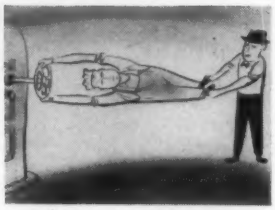
SELF-RESPECT is basically how you feel about yourself, and how you feel about yourself is the vital core of your personality. You compare yourself to other people, and you sometimes have feelings of inferiority. But you know when you do a job well, and doing a job well gives you self-respect.

### Economic security



A LIVING WAGE and steady employment are important to you. If you are worried about your job, you can't work efficiently. You want a rate of pay that is fair, and you want your work to be recognized. You also want good working conditions and the right to complain. You also want to be consulted.

### Job satisfaction



NOT THIS MUCH, but you do want pleasure and pride out of what you are doing, and you want to make a contribution to the finished product. Self-expresion is necessary for job satisfaction. By doing your job well, you can express your independence, develop self-respect, and win approval.

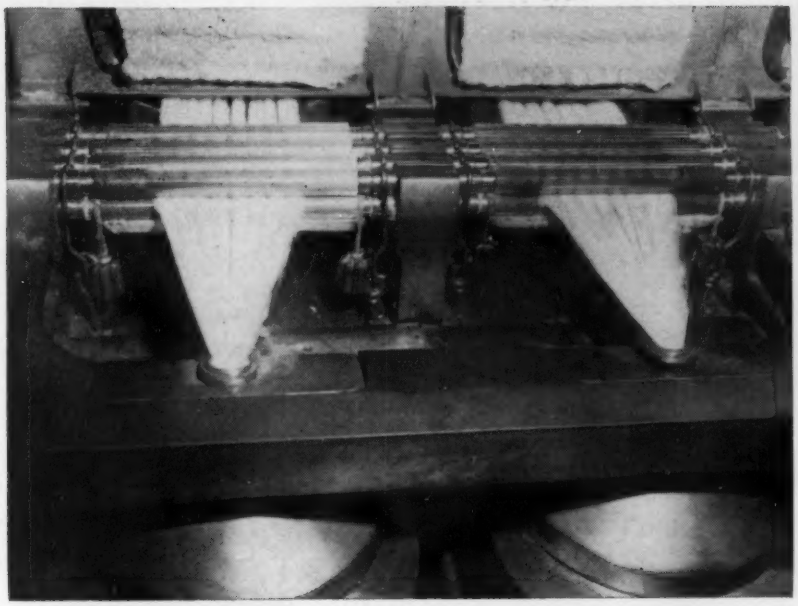
## *Outside problems go to work . . .*

### Worries

OUTSIDE WORRIES—money, health, social status, family relations—are not left behind when you go to work. You are a whole human being all the time, and your outside problems affect your performance on the job. Likewise, what happens on the job affects your outside life.

### Complaints

NO SINGLE CAUSE is behind most of your complaints. Most of your complaints are like fever: they are symptoms that have to be diagnosed. They can be traced to general job dissatisfaction, poor health, domestic troubles, feelings of inferiority, dislike of authority—all kinds of inner conflicts.



NEW DRAWING ROLLS have increased production 33% and decreased sliver variation. Since it is necessary to oil the bearings, there is no danger of getting stock oily. Roll speeds and drafting are also more uniform.

EIGHT ENDS UP are fed to the drawing frames. Breaker frames are creeled a can at a time and finishers a head at a time.

# New DRAWING ROLLS Jumped Production 33%

**By installing new drawing rolls, this cotton mill has obtained some impressive results. Advantages include . . .**

- **33% increase in production**
- **More-uniform sliver**
- **Lower maintenance costs**

**By MICHAEL LONDON,** Assistant Editor, TEXTILE WORLD

Eagle & Phenix Div., Fairforest Co., Columbus, Ga., has increased production 33% and cut sliver variation from 35% to 14% since installing new drawing rolls.

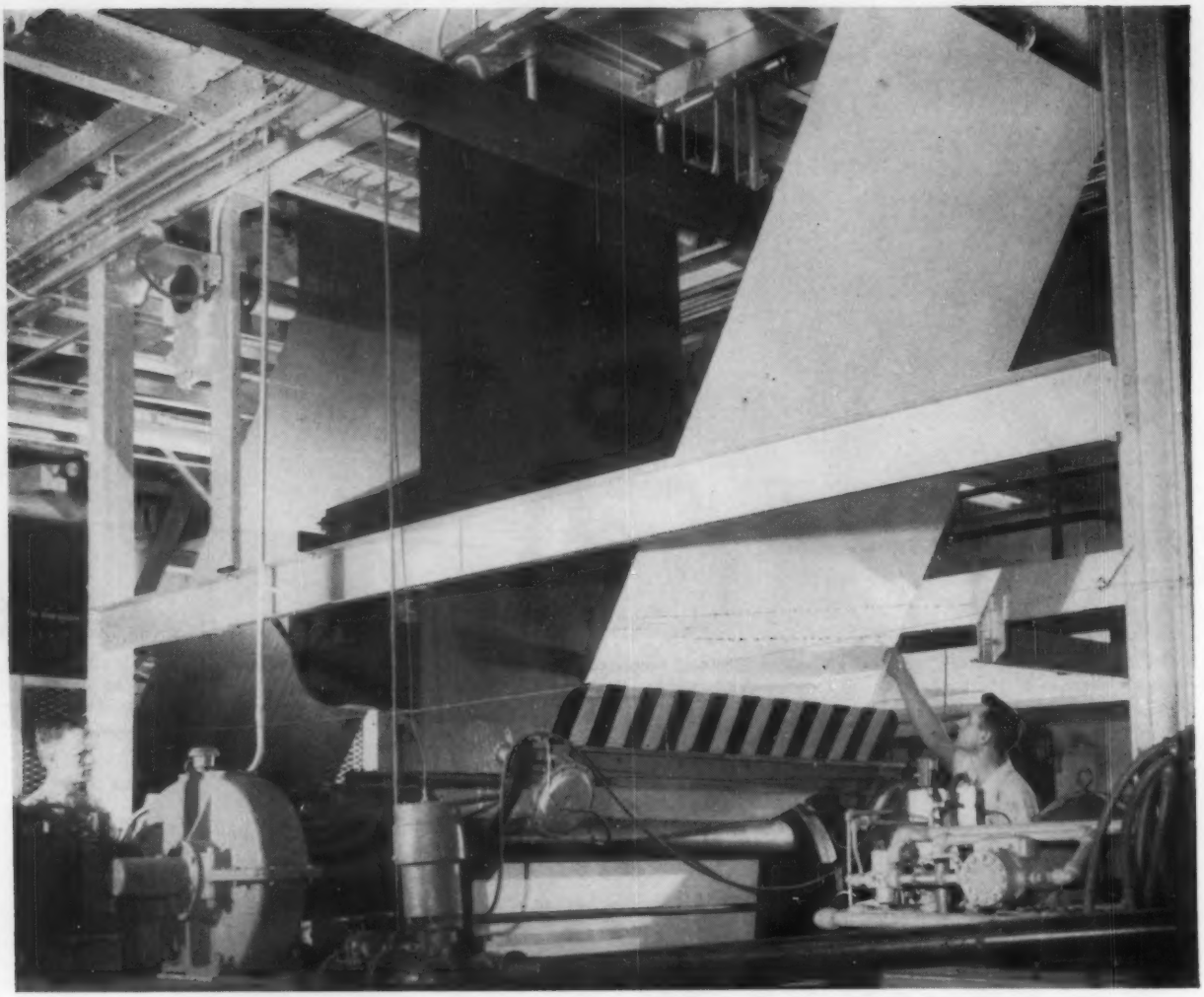
The drawing frames, with Ideal rolls, are fed eight ends up. New cans are creeled into the breaker frame one at a time as old cans run out. Finisher frames are creeled a head (eight-ends) at a time.

The breaker has an automatic knock-off to stop the machine when the cans are full. On the finisher, a yardage knock-off stops the frame when a certain yardage of sliver has been processed.

All rolls are equipped with ball bearings that require no oiling. As a result, there is no more oily stock caused by oily bearings. Roll speeds and drafting are more uniform, and the mill expects a longer life from rolls.

The frames, powered by individual electric motors, deliver sliver at the rate of 200 ft. per min. The mill uses 53 breaker and 58 finisher drawing frames with six deliveries per frame. A drawing tender runs six finishers and five breakers.

Finished sliver weighs 55½ grains per yard. The sliver from each frame is checked for weight every 24 hrs., and the sliver from three frames is tested every day for evenness.



NYLON TIRE-CORD FABRIC is padded in a latex mixture at the start of the process.

# *Bigger Market for Nylon TIRE CORD?*

**Stretch of nylon tire cord (called "growth" by tire men) has limited nylon in a big market: heavy-duty truck tires. To stop the stuff from "growing" and get a whack at that lush market, Firestone Textiles, Gastonia, N. C., has come up with an answer—a nylon-cord stabilizer.**

**Here's how Firestone does it—**

**By ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

FIRESTONE's Gastonia, N. C., plant has just put into production a new machine that pretreats and removes excess stretch from nylon cord at 30 to 60 yds. per min. The operation is continuous and is precisely controlled throughout.

Although strong and heat-resistant, nylon cords made from yarn as received from the supplier are not satisfactory for tire carcasses. Nylon's unusual elongation becomes permanent stretch to some extent when a tire based on this material is put in service. To overcome this tendency to grow, nylon cord has to be heated and put under tension before it is incorporated in the tire.

Large rolls of nylon cord (1650/2), weighing 3,450 lbs., are processed.

A heavy pad with air-actuated set is used to impregnate the cord with a mixture of latex, carbon black, and penetrants. The mix is supplied from

800-gal. tanks. As it leaves the pad, the cord passes over a vacuum slot that removes excess liquor and returns it to the pad box. The cord then goes into a gas-fired drying tower equipped with water-cooled rollers that guide the cord through several passes in the tower.

As it leaves the drying tower, the cord is threaded through a series of heavy rolls mounted in a frame at the floor level. The speed of the rolls may be varied in relation to the delivery rate of the cord from the drying tower, and it is at this point that tension is applied to remove the excess stretch in the cord. The process is repeated through a second set of variable-speed rolls and a third heating tower, followed by a third set of variable-speed rolls. The cord is cooled as it leaves the third tower and goes into an accumulator that provides slack when it is necessary to doff a roll of finished cord.

Every phase of the operation is controlled electronically through a control panel that provides regulation at 56 different processing points. Three dial scales indicate tensions being applied at the three stages of the stabilizing process.

### Continuity Is Important

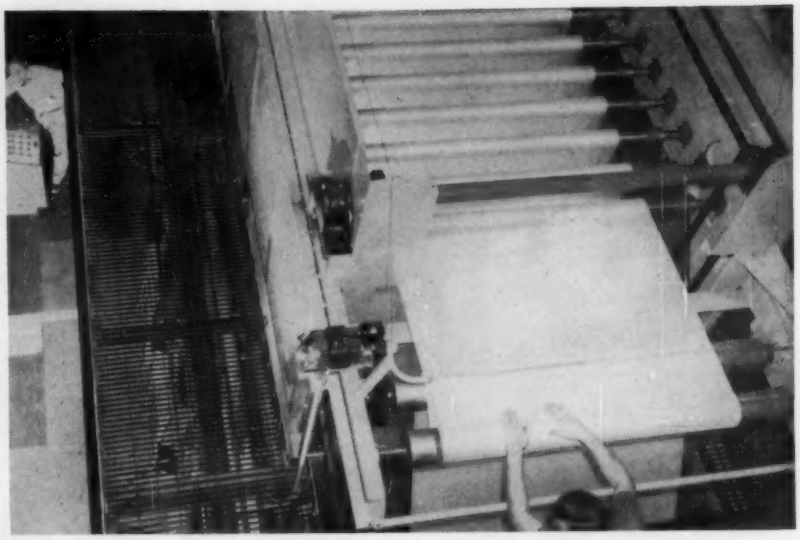
The stabilizing process requires considerable heat—up to 400° F.—and the cord must move continuously or damage will result. An accumulator at the entering end provides working slack during roll changes. Joining a new roll to the one running out is done by vulcanizing the lapped ends in the splicing device. This step takes about 60 secs., and the unit uses slack from the accumulator to operate during this time.

Should a breakdown occur, a scavenging system floods the towers with cold air so that the cord does not disintegrate.

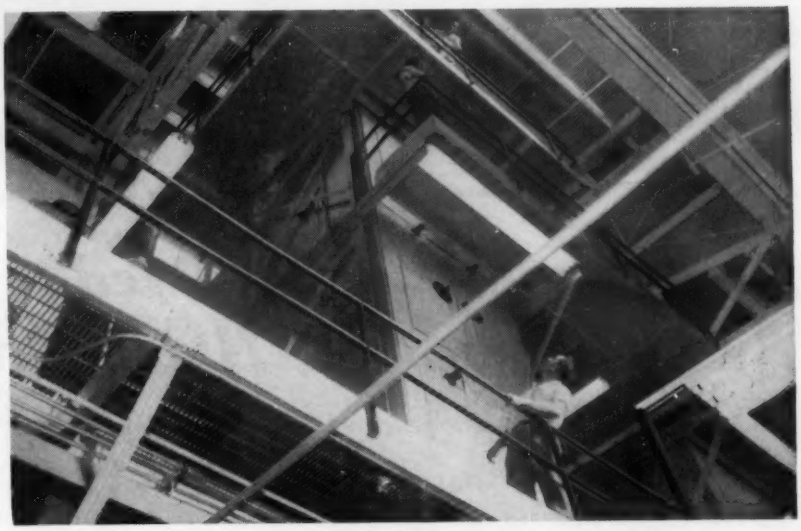
A pull on a wire cable that encircles the unit can shut down the entire machine, turn off the heat, and start the scavenger fans. All moving parts are well guarded, and guards must be in place before the machine will start.

### Improved Tires Result

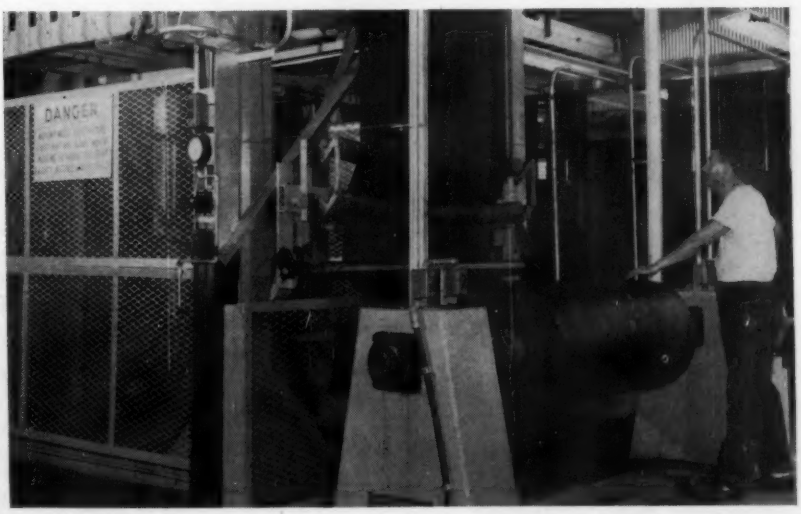
Because the cord body has been stabilized before being made into a tire, better service and longer life can be expected. Prior to stabilization of nylon cord, the growth problem was so serious that not many heavy-duty truck tires were made from nylon cord. Firestone thinks that the new process will eliminate that objection and permit production of a superior carcass for heavy duty. At present, cord fabric for passenger cars is being produced.



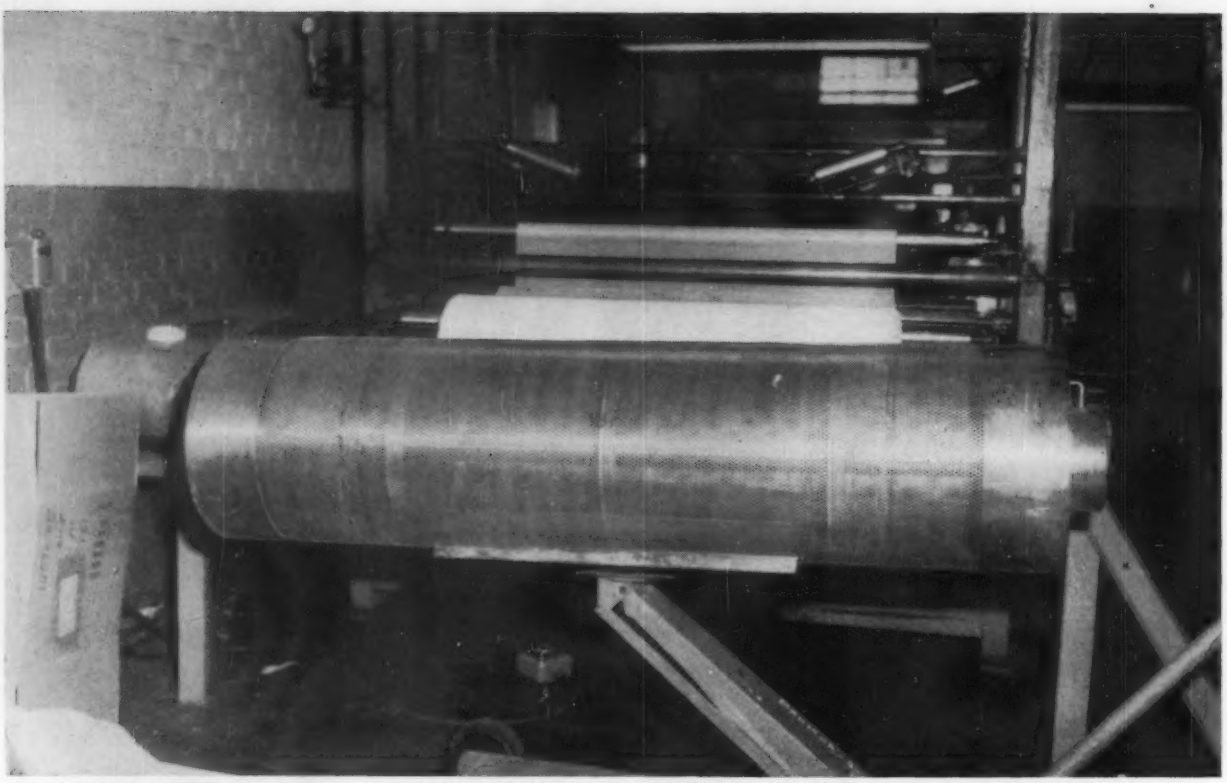
**THE ACCUMULATOR** at the entering end provides slack when roll changes are necessary.



**THE FIRST DRYING TOWER** removes excess moisture and starts the tensioning process.




**BATCHING** the finished roll completes the process. The delivery-end accumulator operates in the cage at left.



PERFORATED BEAMS like this one are the heart of the process. The beam is covered with muslin prior to winding on the fabric.

# *Piece Goods Can Be Dyed By WARP-DYEING Methods*

**Fabrics of natural and synthetic fibers are now being dyed in a closed pressure machine in lots up to 2,500 yds.**

- **Dyeing time is 3 to 4 hrs.**
- **Loading and unloading take only a few minutes**
- **Losses from jig ends and torn fabrics are eliminated**
- **Sample chamber aids in matching shades**

**By ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

A SOUTHERN SYNTHETICS finishing plant is now dyeing a variety of piece goods by warp-dyeing methods. Dye batches equivalent to one large beck or two jig loads are dyed in little more time than it takes to load and unload a conventional beck. Goods include shirtings, sheers, and suitings. The suitings are made of Dacron or blends of that fiber.

Actual dyeing time on established shades is from 3 to 4 hrs.; loading and unloading require only a few minutes. Losses from jig ends and torn fabrics are eliminated, and variations in shades are minimized.

A new closed pressure-dyeing machine for fabrics, developed by Burlington Engineering Co., made the new process possible. The method resembles warp dyeing in that the fabric is wound on a perforated beam or center, and dye liquor is pumped through it. Flow reversal and temperature are controlled automatically. One operator can handle several machines.

## How Cloth Is Prepared

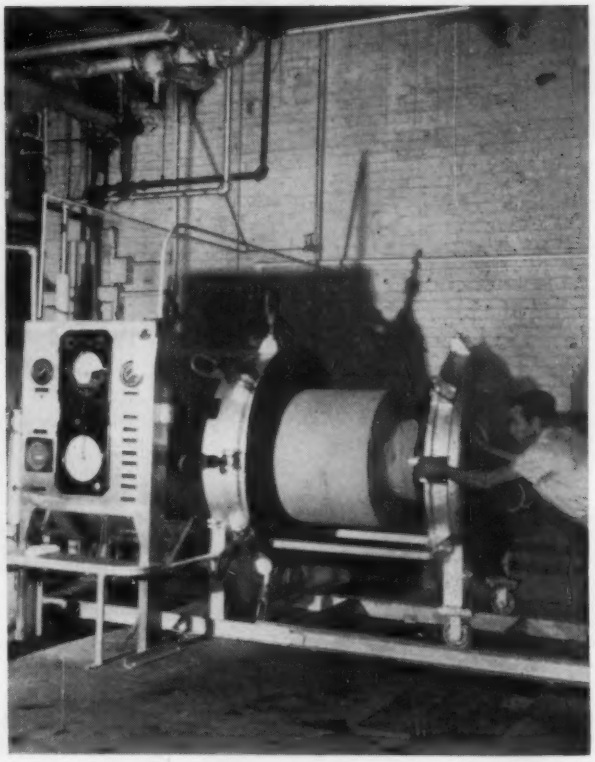
To determine which fabrics can be dyed satisfactorily by this method, construction must be considered instead of actual weight. Porosity is desirable, since tightly woven materials impede dye flow.

Cloth, especially in light shades or requiring closing up, may be boiled off prior to dyeing. If construction permits the fabric to lie flat, it is feasible to extract and beam for dyeing without drying. But it is better to dry some styles before beaming.

Since operation of the system depends on liquor flow through a mass of fabric, it is essential that the fabric be positioned carefully on the perforated center. Tension must be adequate but not so great as to impede the flow of dye liquor.

Lots are assembled in the gray room in amounts determined by the type of goods to be dyed. Fabrics weighing from 7 to 50 lbs. per 100 yds. are being handled at present.

**WINDING THE BATCH** may be done on any suitable batcher. The outside of the roll is covered with muslin before dyeing.



**LOADING THE MACHINE** is quick and simple. The Taylor control panel provides for automatic control of each phase of the dyeing cycle.

Lots run up to 2,500 yds. For example, a batch of cotton-nylon shirting, 7 lbs. per 100 yds., is made up as follows:

Fabric is wound on the center by a conventional winder equipped with air-operated guiders to assure well-aligned selvages. This operation is performed by mounting on the winder a perforated beam covered with several layers of muslin to protect the fabric from perforation marks. On each side, selvages should overlap the perforations by 1½ to 2 ins. Moderate tension is used to form a firm but not rock-hard roll. (A sample is taken at this point for shade matching.) The roll of cloth is covered with muslin lapped over the fabric edges and secured to the beam with ropes.

## How Goods Are Dyed

The prepared roll is taken to the dyeing machine and placed in a cradle that centers the roll in the dyeing chamber. Next, the cradle is run in and the hinged door is closed. By means of a screw device, the perforated center is positioned firmly against the dye-delivery connections at the opposite end of the vessel.

With the machine loaded and locked against leakage, the shading sample is placed in a small auxiliary chamber connected to the main vessel in such a way that the chamber receives a proportionate flow of the dye liquor. Then, water is run into the machine until the system is full, the pump is started, and the water is forced through the fabric. Flow usually is from inside to outside, but automatic reversal is provided at predetermined intervals.

Steam raises the temperature of the liquor to 100° F., and circulation is maintained for 5 mins. At this point, dye assistants are added and the temperature is raised to 180° F. Next, the dyes are added from a 50-gal. drum connected to the pump intake. This drum also serves as a receiver for

CONTINUED ON PAGE 206

**SAMPLES ARE TAKEN** through this small chamber, which also is used for dye additions when dyeing is under pressure.

**TEXTILE ENGINEERS and their discussion leader (left) at their annual meeting in Chicago in January could see a new line opening up—maintaining production machinery. They are ready to start . . .**

# *Solving* MAINTENANCE *Problems*

THE AUDIENCE in the picture above is listening to a technical discussion of what can be done to make production machinery run better.

Taken as a group, this audience was a fair sample of the 2,300-odd engineers who descended on Chicago in January for the Plant Maintenance and Engineering Conference.

W. T. Watson, plant engineer, Judson Mills, Greenville, S. C., (left) was one of 53 engineers who led similar discussions in several engineering fields. And taken as one item from the program, the subject of the textile session was fairly typical of all the things the engineers were talking about.

The Plant Maintenance Conference, in turn, provided a cross-section view of what is going on in engineering generally. The P. M. & E. C. places emphasis on such subjects as getting along with unions, worker motivation and morale, communicating information, and selection and indoctrination of personnel. Looking at the meetings as a whole, you get a snapshot picture of the conference and the work it is doing.

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*The textile discussion on floor maintenance will be published in an early issue of* TEXTILE WORLD.

## Solving Problems Highlighted

The focus of that snapshot this year was unusually sharp. It was on problem-solving and practical application. In the round-table discussions, in the formal papers, and in the informal lounge talk, the same themes cropped up.

The talk revolved around such questions as:

1. How to use punched-card systems in maintenance
2. Getting along with the unions
3. Planning and scheduling maintenance work
4. Organization of the maintenance force

At the beginning of the textile round-table session, each man was given a written agenda to check for subjects vital in his work. The agenda included (1) the responsibility for maintenance, (2) maintenance organization, (3) maintenance budgets, (4) preventive maintenance, (5) handling work orders, (6) maintenance-labor handling, (7) lubrication, (8) maintenance of air-conditioning equipment, (9) maintenance of floors, and (10) maintenance of electrical equipment.

The audience selected four important subjects to discuss:

1. Preventive maintenance
2. Maintenance of electrical equipment
3. Lubrication
4. Floor maintenance

## Assume More Responsibility

The responsibility of maintaining production machinery by engineering departments was the newest and most important preventive-maintenance subject discussed. In one group of mills, the manager and engineer share jointly in the responsibility for the physical condition of every production machine. Cards, spinning frames, looms, and all other production machines are included.

A department of trained machine inspectors is set up under the control of a central organization for all the mills in the group. No mill in the group has any control over the inspectors.

The system works like this: An inspector for spinning frames, for example, goes to any given mill in the group and dismantles a spinning frame completely. He uses a micrometer to measure the wear of all machine parts and lists them on a checklist. The tolerance for each part is checked against a predetermined tolerance.

Demerit marks are given for machine parts worn beyond the allowed tolerance. The total demerits for a spinning frame run as high as 200

CONTINUED ON PAGE 230

# *Profitable Tips from The PLANT-MAINTENANCE Show*

**► The equipment shown at the Sixth Annual National Plant Maintenance Show in Chicago late in January offers textile mills many opportunities for cutting maintenance costs and improving maintenance efficiency**

**► Out of the hundreds of exhibits, the items reviewed here were selected for their applicability to textile-mill maintenance**

### Stud-Driving Tool

Stud driving in bricks or concrete is said to be possible with Powder Power Tool Corp.'s Drive-It tool made in Portland, Ore.

Here, the corporation's representative demonstrates the mechanics of the tool to TEXTILE WORLD's Mike London.

►A high-density mounting pad designed especially for spinning frames and other large or heavy types of machinery was shown by the Felters Co., Boston, Mass. The new felt pads are ⅜ in. thick and are said to retain their rigidity and absorptive properties indefinitely. The pads can also be used under cards and drawing and roving frames.

►Vacuum tank mounted on a platform truck suitable for vacuum cleaning in narrow aisles was shown by The Kent Co., Inc., Rome, N. Y. The vacuum is arranged to provide for cleaning both dirt and liquids.

►A floor-drying granular material that is said to have high-absorptive properties for oil, grease, water, and other liquids was shown by Canfield Oil Co., Cleveland, Ohio. Cost of the material is about $70 per ton.

►Vibration-absorption and machine-leveling pads were shown by Clark, Cutler, McDermott, Franklin, Mass. The pads are said to remove 8% of shock and noise from machines. They're impervious to oils, water, acids, and alkalis and do not require cementing or bolting to machines or floors.

►A set of ball-bearing installer sleeves that are said to provide safety to grease seals and flanges were shown by Complete-Reading Electric Co., Inc., Chicago, Ill. There is no need for heating or sweating the bearings into position; a press or mallet will do the job.

►A sound absorber, with dimensions 12x12x24 ins., was shown by Elof Hanson, Inc., New York, N. Y. The absorbers, suspended from ceiling or supports, can be placed right in the intense sound area. The Sonosorber is nonflammable, weighs 2½ lbs., and is easily cleaned.

### Dust Collector

A dust collector with a 1,260-cu.-ft.-per-min. capacity was shown by Aget Mfg. Co., Adrian, Mich. The unit is driven by a 1½-hp. motor and has a 6-in. inlet. A circulating cleaner keeps the filter free from dirt and lint.

### Floor-Maintenance Machine

A rotary floor-maintenance machine called the Floor-King was shown by American Floor Surfacing Machine Co., Toledo, Ohio. TW's Dick Pressley is shown operating the machine, which, when equipped with different attachments, can be used to scrub, polish, or grind wood or concrete floors. The unit is also equipped to dry-clean rugs.

►A grating that provides an antiskid surface was shown by Grip-Strut Div., The Globe Co., Chicago, Ill. The grating is available in steel or aluminum and can be used for flooring, platforms, and stairways and as a light-diffusing material for acoustical ceilings and fluorescent lighting. Also shown were lightweight cable and tube raceways. Since the raceways consist of side channels connected with cross struts, the cables can be dropped at any point along the raceway.

►Steam traps with special features to make them suitable for steam lines to slashers were shown by Sarco Co., Inc., New York, N. Y. The traps have high starting load capacity for the initial heat-up. Another feature is said to be freedom from all corrosion.

CONTINUED ON NEXT PAGE

### Equalizing Sling

An equalizing and locking sling for unbalanced and difficult-to-grip loads was shown by The Caldwell Co., Rockford, Ill. As tension is applied, the legs of the sling automatically adjust themselves and lock in position.

► A solenoid valve that operates from 0 to 150 psi. with low current consumption was shown by Atkomatic Valve Co., Inc., Indianapolis, Ind. The valve has instantaneous opening and closing speeds and can be used with air, gas, Freon, methyl chloride, water, and oil. It can also be used with steam at 0 to 15 psi.

► Kwik Kafe, an automatic coin dispenser for hot coffee was demonstrated by Rudd-Melikian Distributors, Inc., of Illinois, Chicago, Ill. The dispensers and frozen coffee concentrate are distributed on a percentage-of-sale basis.

### Vacuum Cleaner

A twin-powered vacuum cleaner designed to pick up heavy bulk materials such as rags, paper, litter, or metal chips was shown by American Cleaning Equipment Corp., Chicago, Ill. The unit, which can use up to a 3-in. hose, can be used for cleaning under equipment and other hard-to-reach places. It can also be used for picking up liquid. The tank is equipped with a dump valve for emptying.

► A roofing material that can be applied over a badly alligatored roof is said to be low in cost and durable. The coating is applied under and over a mesh of flexible glass fiber that hugs the contours of the eroded roof. The manufacturer, The Tremco Mfg. Co., Cleveland, Ohio, says 528 ft. of the mesh 27 ins. wide and a 55-gal. drum of the coating will treat 1,100 sq. ft. of roof.

► A mount for delicate instruments that are mounted on vibrating machines was shown by The Barry Corp., Watertown, Mass. Called the Series 5200 Barrymount, the mount is a combined shock and vibration isolater. Interlocking metal parts keep the isolator from coming apart if the rubber element should fail.

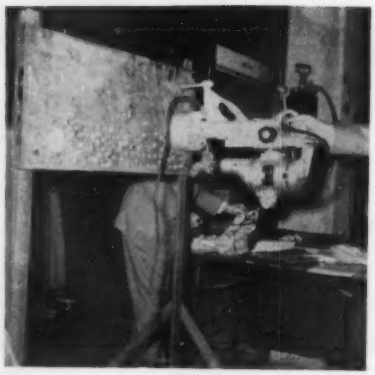
► The Water Ram, a tool for keeping waste and drain pipes free and clean, was shown by Hydraulic Mfg. Co., Kiel, Wis. The action of the tool is based on impact, not pressure. After air pressure has been built up in the Water Ram, the compressed air is suddenly released. The impact strikes a static column of water in the pipe, and the wave of kinetic energy removes the obstruction.

### Ultrasonic Degreaser

Ultrasonic waves are used to degrease metal in the Soniclean unit shown by Detrex Corp., Detroit, Mich. Chlorinated solvents provide the cleaning medium through which the sound waves at 20,000 cycles per second pass. The sound waves cause the solvent to hit the dirty item with direct impact, and grease in cavities and small bores is readily removed.

► Rust can be retarded on metal tanks, metal ladders, and other similar surfaces if its rust-preventive coating is applied, said a representative of Rust-Oleum Corp., Evanston, Ill., who showed the product. The liquid material is simply applied with a paint brush after the surface is scraped and brushed with a wire brush.

► Mop wringer that squeezes the water out of yarn floor mops with one quick downward stroke on a lever was demonstrated by Geerpres Wringer, Inc., Muskegon, Mich. The wringer hooks over the side of a tank. Advantages, according to the manufacturer, are (1) it doubles mop life, (2) mopping is faster, and (3) there's little work in wringing out mops.



### Magnetic Drill Press

A magnetic drill press that makes it possible to drill in very difficult places was shown by Buck Mfg. Co., Los Gatos, Calif. An electromagnet with a pull of 1,000 lbs. attaches the drill to work. The drill, which has a 10-in. stroke and can drill holes up to 1½ ins., can also be used for reaming, tapping, and countersinking.

► A protective silicone lotion designed to protect hands from water, cutting oils, grease, alkalis, printing inks, chemical dusts, paints, and other contaminants was shown by G. H. Packwood Mfg. Co., St. Louis, Mo. The product is called Pax Silicone Lotion.

► An improved hook-on volt-ammeter was shown by General Electric Co., Schenectady, N. Y. The instrument has a range and scale-changing switch that provides for a simple selection of the proper range and scale with a simple movement of the switch knob.

► A combination pipe cutting and grooving tool was shown by Beaver Pipe Tools, Inc., Warren, Ohio. The tool cuts and grooves pipe in one operation. The tool comes in two sizes, 2½ to 4 ins. and 4½ to 8 ins. The larger size has two grooving and two cutting knives. Also shown was a wrenchless chuck that can be adjusted with the fingertips. The chuck handles ⅛- to 2-in. pipe or ¼- to 2-in. rod or bolt stock.

### Fire Fighter

A fire fighter that uses high-pressure fog—water under 800 psi.— was shown by John Beane Div., Food Machinery & Chemical Corp., Lansing, Mich. The fog puts out the fire by cooling, smothering, and isolating action, and thereby minimizes the water damage so prevalent in fire fighting. The unit, the STA-35-BFF, requires floor space of only 32x35 ins. Spring-loaded hose reels compensate for hose expansion under high pressure.

## Plant Maintenance Show

### Quick-Change Saw

Bench saw in ½-, ¾-, and 1½-hp. ratings was shown by **DeWalt, Inc.,** Lancaster, Pa. The saw dados, miters, and bevels. The main feature is that conversions from one job to another can be made quickly.

► Variable-speed drive with automatic control was demonstrated by U. S. Electrical Motors, Inc., Los Angeles, Calif. The drives are used for the following applications: Constant liquid levels, constant flow, constant temperature, boiler feed-water treatment, speed control, etc.

► Adjustable steel loading ramps to form a bridge between loading docks and a truck or railroad car were shown by Loomis Machine Co., Clare, Mich. The ramp is equipped with a counterweight so that adjustments in height can be made quickly.

### Slasher Pump

Slasher pump, said to be very effective on slashers with fully automatic controls, was shown by Hills-McCanna Co., Chicago, Ill. When the pump is used, size flow can be controlled within 1%. Features are high-speed self-cleaning valves, absence of friction parts in the liquid-flow end, and simple maintenance. The cost is $760.

► Inlaycrete, a hard and dense floor resurfacing material, was shown by the Garland Co., Cleveland, Ohio. The material contains quartz and is reinforced with iron to make it withstand abrasion and chemical action. Inlaycrete can also be used for patching and repairing concrete floors.

► Self-sticking warning stripes that are said to oulast painted types were shown by W. H. Brady Co., Milwaukee, Wis. The stripes are designed to identify industrial hazards. Three color combinations are available: yellow and black, black and white, and red and white.

► It weighs just 1,175 lbs.; but a pallet truck shown by Colson Corp., Elyria, Ohio, lifts 4,000 lbs. easily. It's small for warehouse use, has two forward and two reverse speeds, and has an air-cooled single-cylinder four-cycle engine.

### Guard for Welding

Welding safety is provided by portable curtains said to be suitable to isolate spinning frames or looms, for example, during portable-welding operations. The flexible lightweight glass cloth can be laundered repeatedly without harm, says the manufacturer, Standard Safety Equipment Co., Chicago, Ill.

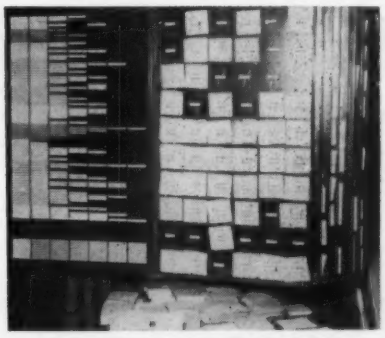
► A machine to dry liquid latex on the back of rugs was shown by Jensen Specialties, Inc., Detroit, Mich. Operating at about 350 kw. and 300° F., Pan-L-Heat is said to dry the nonskid base on 12-ft.-wide rugs at 7 ft. per min. Production for 8 hrs. is said to be over 3,000 linear feet. The over-all length of the dryer is 30 ft.

### Electric Tool

Electric hammer that drives expansion shields into solid concrete for fastening bolts, hooks, and other similar objects was demonstrated by J. D. Polis Mfg. Co., Chicago, Ill. There are no drills to buy because the hammer drills the expansion shell itself into the concrete.

The hammers are made in two sizes. A small hammer drives ¼- to ⅜-in. shells and operates on 115 v. The large hammer is for ⅜- to 1⅛-in. expansion shells and operates on 220 v.

► A clear silicone water repellent for structural masonry was shown by Standard Dry Wall Products, Inc., New Eagle, Pa. The material is designed to keep the coated surfaces clean and is said to be unaffected by surface abrasion and temperature.



### File Cabinet Unit

Maintenance control of work orders, scheduling, and job assignment, job costs for labor and material, and tools are all possible with a single-package file. Work orders are placed at the front of the cabinet opposite a keying code. Other detailed information and records are kept in other sections.

The manufacturer is McCaskey Register Div., Victor Adding Machine Co., New York, N. Y.

CONTINUED ON PAGE 238

# MILL EFFICIENCY

► **Loom efficiency, jobloads, and first-quality production of print cloth and corduroy vary with every mill. Although there probably is no such thing as standard performance, here are mill case histories that may be useful for comparison against other similar operations.**

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

## Three Mills Weave Print Cloth

MILL NO. 1—One group of looms are 40-in. E models, and they are completely rebuilt. They have individual motor drives, Brown spring-top harness motions, midget feelers, Stafford thread cutters, and 22-in. beam heads. The original sliding-bar stop motions were reused.

Print cloths from 64x60 up to 80x80 are woven. The loom speed is 168 ppm.

The other looms are 46-in. X-2 models, and they operate at 182 ppm. The looms are equipped with Draper-Diehl drives, six-harness clock-spring-top harness motions, electric warp stop motions, and 26-in. beam heads.

The same fabrics are woven on both E-model and X-2 looms, but the fabrics on X-2 looms are 6 ins. wider.

Looms per weaver on both models are 60. Loomfixers on both looms have 80 looms, and second hands have 450 looms.

Loom efficiency is 96% on both E-model and X-2 looms. and seconds on both looms are 2%.

Since the cloth on the X-2 looms is 6 ins. wider and the looms run 14 ppm. faster, 22% more cloth is woven on the X-2 looms.

MILL NO. 2—Looms are 40-in. X-2 models running at 192 ppm. The clutches are the dry-disk type. Roll-and-shaft harness motions and sliding-bar warp stop motions are used.

Print cloths of 44x40 and 48x44 constructions are woven.

Weavers have 70 looms and loomfixers 90 looms. Second hands have 425 looms.

Weave-room production is 95%, and second-quality cloth is 1½%.

MILL NO. 3—Looms are 60-in. XP models, and they operate at 162 ppm. Beam heads are 26-in. dia. Two sets of clock-spring tops and two sets of harness cams are used on each loom.

Other equipment is Draper-Diehl drives and electric warp stop motions.

Sheeting of 64x64 construction and 60 ins. wide is being woven.

Weavers operate 60 looms, and loomfixers fix on 60 looms. Second hands have 300 looms.

Loom efficiency averages a little over 90%. Seconds run around 6%.

**TABLE A**

| | Mill No. 1 | Mill No. 1 | Mill No. 2 | Mill No. 3 |
|---|---|---|---|---|
| Fabric woven | Print cloth | Print cloth | Print cloth | Sheeting |
| Model of loom | 40-in. E | 46-in. X-2 | 40-in. X-2 | 60-in. XP |
| Loom speed | 168 | 182 | 192 | 162 |
| Looms per weaver | 60 | 60 | 70 | 60 |
| Looms per loomfixer | 80 | 80 | 90 | 60 |
| Looms per second hand | 450 | 450 | 425 | 300 |
| Loom efficiency | 96% | 96% | 95% | +90% |
| Second-quality cloth | 2% | 2% | 1½% | −6% |
| Amount of woven cloth | 100% | 123% | 112% | 129% |

AMOUNT OF WOVEN CLOTH is considered 100% on E-model looms. Increased loom speed plus wider looms gives more cloth on XP and X-2 looms.

# on Print Cloth and Corduroy

▶ To find out some of the differences and similarities of mill operations on print cloth and corduroy, TEXTILE WORLD surveyed six well-known mills.

▶ Here's what we found out—

## Three Mills Weave Corduroy

**MILL NO. 4**—Looms are 40-in. E models weaving at 156 ppm. Beam heads are 19-in. dia. Part of the looms have dobbies; the others have Brown spring-top harness motions. The dobby-equipped looms have been rebuilt and are driven by individual motors. The cam looms are belt driven.

Electric warp stop motions are used on dobby looms; sliding-bar stop motions are on the cam looms.

The corduroy woven is 90x140.

Weavers run 54 looms and loomfixers have 106 looms. Second hands have charge of 320 looms.

Loom efficiency is 92.5%, and seconds run a little below 5%.

**MILL NO. 5**—Looms are 46-in. XP models running at 155 ppm. The looms have dobbies and tape-selvage motions. Beam heads are 26-in. dia., and four-bank electric warp stop motions are used.

The corduroy woven is 80x140 up to 80x160. Warp yarns are 30s.

Weavers tend 42 looms. A loomfixer's section is 84 looms. Second hands look after 250 looms.

Weave-room efficiency is 95%, and seconds are constantly below 1%.

This job is set up for first-quality cloth, and loom speed is not considered important.

**MILL NO. 6**—This weave room is equipped with 52-in. X-2 looms running at 173 ppm.

Looms have clock-spring-top harness motions, electric warp stop motions, and 26-in. beam heads.

The cloth woven is 80x176 corduroy. Warp yarn is 26s, and filling is 24s.

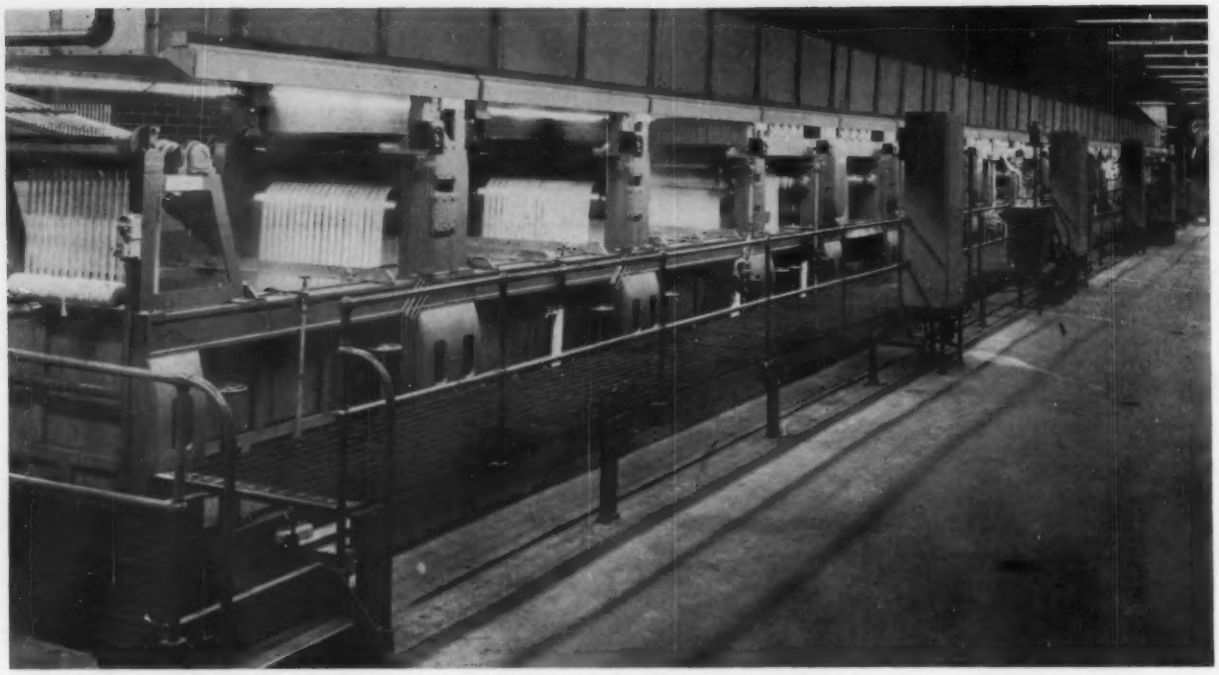
Weavers have 50 looms. This weave room is a small one and, consequently, the loomfixers' jobs are laid out in a different manner from the other loomfixers' sections in the same mill. Loomfixers have 50 looms each and do their own warping for lack of a better layout. The second hand has E-model looms in addition to the X-2 looms and looks after a total of 600 looms.

Weave-room production is 90%, and second-quality cloth is 8%. This weave room has just been started up, and loom running conditions are expected to improve considerably.

**TABLE B**

| | Mill No. 4 | Mill No. 5 | Mill No. 6 |
|---|---|---|---|
| Fabric woven | Corduroy | Corduroy | Corduroy |
| Model of loom | 40-in. E | 46-in. XP | 52-in. X-2 |
| Loom speed | 156 ppm. | 155 ppm. | 173 ppm. |
| Looms per weaver | 54 | 42 | 50 |
| Looms per loomfixer | 106 | 84 | 50 + warping |
| Looms per second hand | 320 | 250 | 575 |
| Loom efficiency | 92.5% | 95% | 90% |
| Second-quality cloth | −5% | −1% | 8% |
| Amount of woven cloth | 100% | 112% | 130% |

**QUALITY OF WOVEN CLOTH** comes before loom speed at Mill No. 5. Even with looms geared to make high-quality corduroy, 12% more cloth is made.



**MERCERIZER** measures 460 ft. from the creel to the snakers. A hood covers the entire mercerizer, and a raised platform that runs along its length makes the unit easier to operate.

# *Coats & Clark's New* YARN MERCERIZER

**The new yarn mercerizer at Coats & Clark is probably the longest and the best controlled in the country. Features include—**

- **A.c. syncro variable-speed drive for six different sections**
- **Fully controlled dryer with moisture-control apparatus**
- **Modern, efficient caustic-recovery system**

**By MICHAEL LONDON,** Assistant Editor, TEXTILE WORLD

THE MERCERIZING OPERATION spanning 460 ft. at the Coats & Clark, Inc., yarn- and thread-finishing plant in Toccoa, Ga., contains what is probably the longest and the most finely controlled mercerizer in the country. The unit, built by H. W. Butterworth & Sons Co., cost about $400,000.

The mercerizer processes yarn and thread at the rate of 5 to 30 yds. per min., with an average of 25 yds. per min. Average weight of yarn is 2 lbs. per linear yard.

A convenient walkway for the operators runs along the entire length of the mercerizer at a height of 2 ft. A hood fully covers the wet operations, and the vapors are eliminated by a stainless-steel-duct exhaust system.

The creel holds 500-lb. ball warps that contain 378 fine threads or 189 coarse yarns. A spare ball warp is loaded under the one in use and is tied to the original as it runs out; so it is unnecessary to stop the machine for loading. The mercerizer processes 48 ball warps of fine thread or 24 ball warps of coarse yarn.

Entering the mercerizer proper, the yarn passes through three boil-out boxes. Each contains water at 190 to 200° F. Squeeze rolls at the end of each box apply pressure of 50 lbs. per in. across the yarn through 48-in. rolls. The squeeze rolls, pneumatically loaded, have stainless-steel or rubber-covered surfaces and are located at the end of each box in the machine. All boil-out boxes have hexagonal-shaped stainless-steel open reels to help the water penetrate the yarn.

The yarn then passes through the first cold-wash box, which contains water automatically maintained at 65° F. The cold-water section cools the yarn to keep it from heating up the caustic in the next operation; the yarn then passes through the first caus-

**A.C. VARIABLE-SPEED DRIVES, electrically controlled, drive six different sections of the mercerizer. Speeds can be varied from section to section and positive degrees of tension exerted on the yarn between these sections.**

**TEL INSTRUMENT PANEL controls the variable drives through the potentiometers on the vertical panel. The upper dials indicate the speeds of the drives as a percentage of the speed of the second drive, which reads in yards per minute.**

tic box, which contains caustic at 25% and 70° F. Three squeeze rolls, used to prevent slippage, divide the caustic box into two sections; and the yarn makes five passes through the liquor in each section.

The first hot-wash box is next. It contains water at 140° F. Like the caustic box, the wash box is divided by a three-roll nip, and the yarn makes five passes on each side of the rolls. A second cold wash follows; it cools down the yarn before the second caustic treatment. Temperature of the water is again 65° F.

## Double Mercerization Increases Luster

In the second caustic box, the concentration and the temperature of the liquor are similar to the first; and again the yarn makes five passes on each side of the three-roll nip. The reason for double mercerization is greater luster. Circulation between the caustic boxes is 100 gals. per min., and 43% caustic from the make-up line is fed into the working solution to keep the concentration constant. The circulating bath is constantly bled to maintain high caustic purity. A cooling unit in the basement, through which the caustic circulates, keeps the liquor temperature constant.

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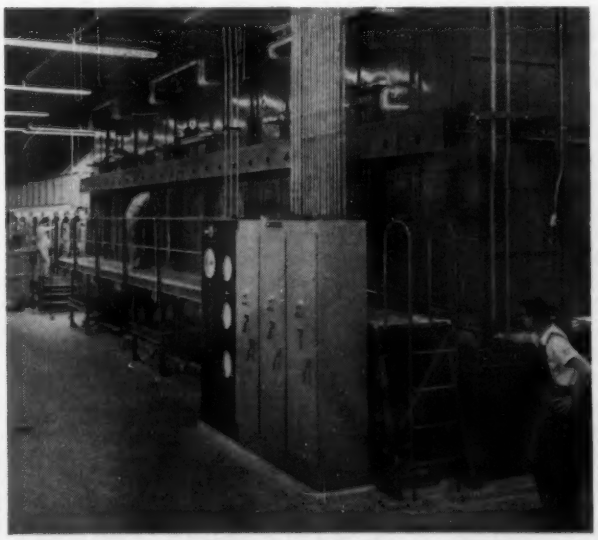
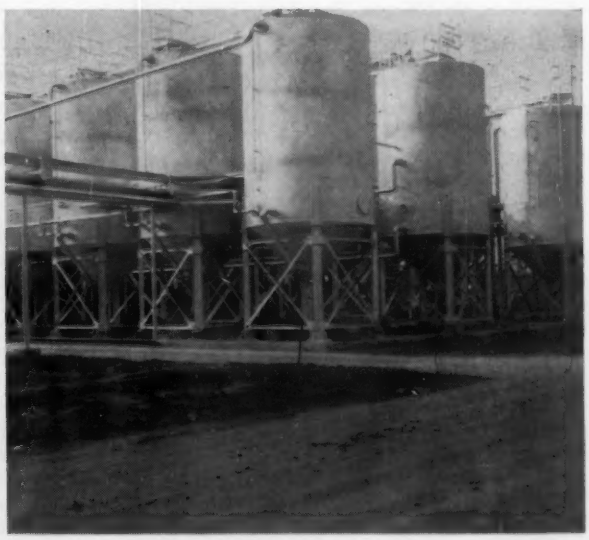


**DRYER heats the yarn through steam-heated air. There are three sections, each with temperature control and fan control. When the mercerizer stops, the heat is expelled; and there is always enough yarn in the dryer to run for 5 mins. to prevent overdried yarn.**



**TANKS outside the plant hold 60,000 gals. of new caustic at 50%, 60,000 gals. of recovered caustic at 40%, and 60,000 gals. of wash water with 10% caustic. The recovery system can handle 50 gals. per min. of wash water with 10% caustic.**

# RAW FIBER and PREPARATION Discussed at Cotton Clinic

► The 1955 Cotton Research Clinic, sponsored by the National Cotton Council, was held this year at Pinehurst, N. C., late in February.

► Reports briefed on the following pages cover the new Pima S-1, fiber-length distribution, card modifications, and quality tests in preparatory departments. The remaining papers will be reviewed in the May issue of TEXTILE WORLD.

# EXTRA CYLINDER On Card Promises Waste Reduction

► Experiments at Clemson indicate that a waste cylinder mounted on the card may reduce white waste in mote box up to 70%. Air pressure under lickerin also influences waste removal.

By **HUGH M. BROWN,** School of Textiles, Clemson College

THIS IS A PROGRESS REPORT on a preliminary card-waste study at the Clemson School of Textiles. Two plans to reduce card waste were considered. The first plan involved mounting a single, properly clothed cylinder between the lickerin and the regular flat section to serve as a separate flat section. The added cylinder runs in the opposite direction, as illustrated.

To strip this extra cylinder and return the strippings to the stock, the waste-removal cylinder is stripped by the lickerin itself.

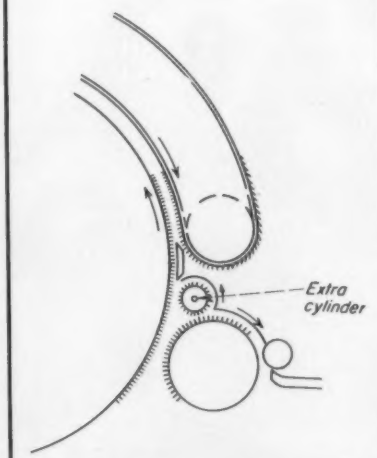
The usual lickerin cover is replaced with one to cover both the lickerin and the added cylinder. A Plexiglass window in the housing permits observation of the added waste-removal cylinder, the lickerin, and the amount of waste and cotton being returned to the feed plate.

Studies were made on two different cottons. The results did not turn out as expected. There was no significant reduction in neps; and instead of an increase in motes removed, there was a decrease. However, there was a surprising reduction in white waste in the mote-box, as high as 60 to 70%, and there was a considerable reduction in total lint loss.

## Cylinder Alters Air Currents

A question arose: Even though there was a definite reduction of large pieces of trash in the flat strip, why were there not more motes in the lickerin waste? The most logical answer to the question is that the addition of the waste cylinder altered the air currents around the lickerin. Measurements showed that the air pressure in the mote box without the added cylinder was 0.004 in. of water; the use of the trash-removal cylinder lowered the pressure to 0.0033 in. In view of the openings in the walls of the mote box, it seemed surprising that there should be any pressure under the lickerin.

The mote box was then sealed with tape, and an air-tight partition was placed across the opening between the chamber under the cylinder and the chamber under the lickerin. Op-




**WASTE-REMOVAL CYLINDER,** mounted between the lickerin and the regular flat section, is designed to serve as a separate flat section.

erating the card without the added cylinder produced a pressure of 0.0047 in. under the cylinder and a vacuum of −0.032 in. to −0.04 in. under the lickerin. When the partition was removed, the pressure under the lickerin rose to 0.0033.

The rise in pressure indicated that in regular card operation, air currents created by the cylinder move into the mote box and are drawn up through the mote knives and lickerin screen. Air is carried under the back knife plate along with the cotton carried by the cylinder, which explains how the vacuum is produced when the mote box is sealed. Pressure measurements showed this action to be greater when the cylinder carried cotton.

When the waste cylinder was added, a much narrower back knife plate had to be used to permit more air to be brought through the lickerin screen and mote knives. The pressure in the mote box was varied. With and without the waste-removal cylinder, an especially trashy cotton was carded with two lickerin speeds at two different pressures in the mote box. When the waste cylinder was used, several effects were noted:

*Normal lickerin speed*

1. Increase in motes in flat strip, in cylinder strip, and in the sliver, but only a small reduction of motes in the lickerin waste
2. Large reduction in lint in the lickerin waste; a considerable reduction of lint in the flat strip, cylinder strip, and in total lint loss
3. Lower lint loss in the mote box with higher mote-box pressure
4. Slightly higher nep count

*High Lickerin Speed*

1. More motes in cylinder strip and in sliver; no change in motes for the lickerin waste, fewer motes in flat strip; very slight decrease in total motes
2. Considerable reduction of lint in all forms of waste except cylinder strip
3. Large increase in neps

The flat strip in both instances was free of large pieces of trash and unopened cotton.

### Air Pressure Saves Lint

The effect of adding air pressure under the lickerin running at normal speed, and making no other changes in the card, is to produce a large reduction of lint in the lickerin waste and some reduction in all wastes. The total saving in lint is as great as that for the waste-removal cylinder used without added pressure, and there is practically no impairment of mote removal.

For the high-speed lickerin, the use of added mote-box pressure gives

CONTINUED ON PAGE 196

# PIMA S-1 Is Reported Superior To Egyptian Karnak

**▶ Fourteen commercial tests showed that yarn is equal in appearance and definitely stronger than Karnak. The new cotton may be the answer to imported fiber needed for thread and fine goods.**

**By DR. BURT JOHNSON,** National Cotton Council

THE NEW PIMA S-1 COTTON, now being released to mills, has been tested commercially by 14 plants making a wide range of yarn numbers.

Egyptian-grown Karnak was used generally as the control cotton. The fiber properties of Pima S-1 show it to be slightly shorter and slightly weaker than Karnak, but it is coarser and has superior fiber-length uniformity.

In the manufacturing factors of waste losses, noils removed, and ends down, Pima S-1 is equal to or slightly better than Karnak.

Although Pima S-1 appears to make fewer neps than previous commercial strains of American-Egyptian cottons, it usually makes a few more neps than Karnak.

All mills were uniformly successful in making stronger single yarns from Pima S-1 than from Karnak. The average yarn-strength increase was 14%. Yarn grades were equal to or better than those made from Karnak.

On the average, plied yarns made of Pima S-1 were 13% stronger than those made of Karnak.

The range of the ratios of Pima S-1 plied-yarn strength to that of Karnak is 87.4% to 135.9%. These percentages were computed on the basis of the uncorrected (for number) strength of the plied yarns. This is a much wider range than the ratios for single yarns, which ranged from 107.8% to 132.7%. Within the group the results are erratic, but in general Pima S-1 performs almost as well in plied yarns (112.6%) as in singles (114.8%). From 19 pairs of results, 8 showed that Pima S-1 performed better in plied yarns than it did in the singles used for making the corresponding plied yarns.

Other observations show that Pima S-1, in terms other than strength of gray yarns, has as high a utility value as does Karnak. Two mills reported that all Pima S-1 plied yarns finished and dyed in several ways were stronger than Karnak yarns receiving similar treatments. Mercerized Pima S-1 yarns do not increase as much percentagewise in strength as do Karnak yarns but are stronger than the Karnak mercerized yarns.

One mill wove 3.82-oz. 144x76 cloth that tested:

| | Karnak | Pima S-1 |
|---|---|---|
| Warp strength | 119 | 135 |
| Filling strength | 69 | 77 |

Another mill made observations, unaccompanied by quantitative data, on efficiencies of operations after spinning. It found that there were more reties at the spooler for Pima S-1 than for Karnak; but that in warping, quilling, twisting, and weaving, Pima S-1 proved to be equal to or better than Karnak.

Whether or not subsequent crops of Pima S-1 will equal these results cannot be forecast. As of now, however, it appears users of extra-long staples can be assured of an adequate world supply of high qualities in these staples for many years to come.

Cotton Research Clinic

# CARDING MODIFICATIONS Double Production

► Minor changes permit two 15-oz. laps to be fed and two 50-grain slivers to be delivered. Neps are reduced by 30%.

By S. H. SHERMAN, U. S. Rubber Co.

WE HAVE HEARD A GREAT DEAL during the last four years about increasing card production. There seems to be, however, no widespread adoption of the practice.

N. C. State surveyed 150 mills and found that 32 had tried high-production carding. Only 21 of the 32 reported benefits from increased production, fewer neps, or both.

Reasons for failures appear to be (1) not applying all of the recommended changes, and (2) giving up too easily.

In 1952, we decided that with so much smoke, there must be some fire. Since reports on high-production carding from all sources ranged from good to bad, we decided to do some experimenting for ourselves. We realized there were problems.

To avoid known troubles with high doffer, comb, and comb-box speeds, we added another coiler to our card and split the web by dropping a steel ribbon down between the doffer and cylinder. We then added the standard attachment to our card for feeding two laps. We doubled our production without changing the speed of any part. Two 15-oz. laps were fed into the card, and two 50-grain slivers were delivered at the front.

[*Experimental work was done by Elvin H. Bond, supervisor of processing development, Textile Div., U. S. Rubber Co.*]

### Feed Roll Is Replaced

Bunch plucking at the lickerin was an immediate problem. To overcome this difficulty, we replaced the regular feed roll with a special feed roll having deeper flutes. We also added 18 lbs. of weight to each side of the roll and replaced the top mote knife with a Saco-Lowell control roll.

Other changes were:

1. Lickerin speed was increased to 650 rpm. Higher speeds than this caused too much white cotton in the lickerin fly.
2. The cylinder speed was increased to 203 rpm., and the production gear was changed to maintain the original feed-roll and doffer speeds.
3. The flat pulley was changed to maintain our regular top-flat speed.
4. Perforated screens were installed to eliminate air turbulence caused by the higher cylinder speed.

Total cost of these changes was estimated at about $1,100 installed.

Experiments showed 0.045 in. from feed plate to lickerin and 0.007 in. from control roll to lickerin allow the cotton to be released by the feed roll before it is injured by the lickerin. The control roll holds it until the bunches are divided and distributed over the surfaces of the lickerin and cylinder.

### Floor Space Is Saved

Later, we modified the lap-feeding device to save floor space. This was done by feeding the second lap from a roll placed above the regular lap roll.

When we ran Middling 1-in. cotton on the card, the modifications raised production from 9.6 to 19.2 lbs. per hr. and reduced neps 30%. Sliver was more even, yarn had equal or better strength, and top flat waste was reduced 34%.

# FIBER-LENGTH DISTRIBUTION Is Definitely a Quality Factor

► Various methods of measuring fiber-length distribution are described, and four case histories are cited to prove the inferior quality of cottons containing excessive quantities of short fibers.

By HELMUT WAKEHAM, Textile Research Institute

COTTON FIBER-LENGTH DISTRIBUTION is an important quality factor from both the processing-facility and yarn-quality points of view. Differences in fiber-length distribution, which seem to account for differences in cotton quality, are not readily detected by measurement of upper quartile length, length uniformity, or similar measurements. The practice of considering only weight-length distributions is not adequate. The general attitude seems to be that the short fibers in the sample, because they do not weigh much, can be ignored.

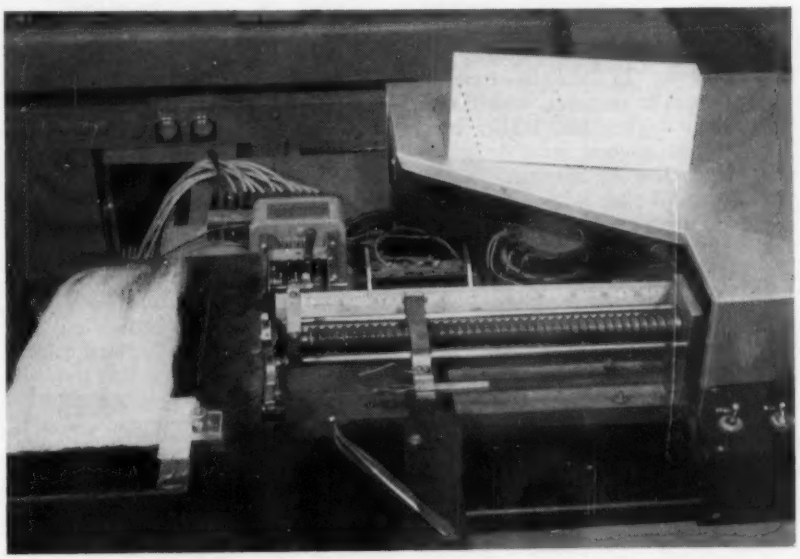
In the conventional fiber-length array, fibers are sorted into common length groups that are weighed. The weight fraction of each length group plotted against the length of the group gives the weight-length distribution. If, however, the number of fibers in each length group is determined by counting or by dividing the group weight by the fiber weight and then the number fraction of each length group is plotted against length, a number-length distribution is obtained.

### Calculation Can Be Simplified

This number-length distribution can also be obtained directly from the weight-length distribution by multiplying the weight fraction by the fiber weight. If individual fiber weight is proportional to fiber length, the latter can be substituted for the former. This makes the conversion relatively simple.

The Textile Research Institute has developed an automatic recording fiber-length tester based on the Wool Industries Research Association's length meter. This instrument measures fibers as short as 0.2 in. Accurate mean lengths and rough length distributions can be obtained with as few as 200 fibers. Time required is little more than an hour.

**FIBER-LENGTH ARRAYS from seed and bale cotton from the same source vary greatly. Bale cotton contains many more short fibers caused by breakage in ginning. These short fibers are important factors in waste production, spinning efficiency, evenness, and strength.**



**FIBER-LENGTH TESTER developed by TRI measures and automatically records fibers as short as 0.2 in.**

## 4 Case Histories

The importance of fiber distribution is illustrated by four TRI studies. In each instance, a pair of cottons, one with a length distribution definitely inferior to the other, was considered.

### 1. Ginhot vs. Ginwet

Two samples of cotton were prepared to study the effects of overdrying prior to ginning. The seed cottons originated in the same field and were picked the same day. The Ginwet portion was passed through two drying towers at atmospheric temperatures and then fed directly into the gin stand at a moisture content of 6%. For the Ginhot sample, the input air for the first drying tower was 450° F., the second tower was unheated, and the cotton was introduced into the gin stand with 3.7% moisture content.

Fiber-length distribution tests showed definitely a larger number of short fibers in the Ginhot sample than in the Ginwet. Breakage indices were 37% and 43% for the Ginwet and Ginhot, respectively.

In the processing experiments, performed at Joanna Cotton Mills, the Ginhot sample yielded more waste, weaker and less-even roving and yarn, and 21.4% more ends down in spinning. A check of the single-fiber properties showed that the cottons were almost identical with respect to their mechanical behavior.

### 2. Raingrown vs. Irrigated

In a study of the differences between raingrown and irrigated cottons, it was found that 3 out of 12 bales of the raingrown sample exhibited pronounced symptons of the deterioration known as cavitoma. Cotton from three cavitomic bales and from nine normal raingrown bales (Rainmed) were subsequently studied in a laboratory and processing comparison.

A number-length distribution test showed a preponderance of short fibers in the cavitomic sample with a breakage index of 43%, as compared with 31% for the Rainmed cotton. Single-fiber properties of the two cottons were the same except that the crimp in the cavitomic fibers was somewhat lower than that of the Rainmed fibers.

In a processing study at Dan River Mills, the cavitomic cotton gave twice as much opener and picker waste and 46% more spinning end breakage than the Rainmed. Roving and yarn strengths and evenness characteristics were clearly in favor of the Rainmed cotton. In the cavitomic cotton, microbiological influences caused the formation of weak places in the fibers that resulted in excessive breakage in later processing.

CONTINUED ON PAGE 194

# A Variety of QUALITY TESTS Are Made at Joanna

► **Variation in the preparatory departments is controlled by blending for fineness and uniformity, recording moisture at the picker, creeling cards systematically, and checking all roving frames daily.**

By **JOSEPH L. DELANY,** General Superintendent, Joanna Cotton Mills Co.

BLENDING BY FIBER FINENESS is a very important part of quality control at Joanna. In the light of present day Micronaire readings, which seem to become higher and higher every year, it makes good sense to go all out in blending by fineness.

Our present basis for fineness blending is to separate the stock into five lots. No. 1 is 4.00 and under. No. 2 is 4.00 to 4.35. No. 3 is 4.35 to 4.65. No. 4 is 4.65 to 5.00. No. 5 is 5.00 and over. This high range forces us to run all of our 40s filling from the No. 1 and No. 2 categories. The rest goes into our somewhat heavier warp yarns. Checks made at the pickers and double checked at the drawing frames show an average for filling of 4.0 Micronaire and a warp-stock average of 4.50. My preference for a 40s filling would be around a 3.75 Micronaire and about 4.00 Micronaire for a 30s warp.

## Blending Is 4-3-2-1

We wanted some sort of system in the opening room that would feed a precise, uniform blend every hour of the day. We wanted it to be uniform in weight, density, volume, and fineness. The system we decided to use requires a long flat roller table, 6 ins. high, located in front of the feeder hopper. It holds four bales of cotton. To facilitate rolling the bale, we use a flat pallet on which the bale is placed.

We start off by having a ¼-full bale nearest the hopper, then a 2/4-full bale, next a ¾-full bale, and finally a full bale at the rear of the roller table. As the bales are fed, each is depleted by a like amount so that when the ¼-full bale is exhausted, the other three partial bales can be rolled forward easily. A previously prepared full bale is put in place. This again restores the bale ratio of ¼, 2/4, ¾, and 4/4. Since each of our bales carries its individual fineness indication number, it is easy to designate definite numbers of fineness for definite hoppers.

The 4-3-2-1 feeding system works well with medium- and high-density bales because they are compact enough to stand alone on the roller feed table. Our system will not work at all with country bales of uncompressed cotton, because when the ties are cut, the bale may immediately expand to a height of 6 ft. or more and fall over. Trying to run stock of this nature can be expensive.

Our industrial engineers checked the opening room and came up with a strange recommendation: add a man to each of three shifts. Their point was that the stock is so bulky it soon runs out of each hopper. Actually, instead of feeding from a large mix of bales, we were feeding from just about one or two hoppers. The answer was to put on more labor to maintain full hoppers and evenness of mix.

The country bales are now sent to a compress station where they are squeezed down to a size suitable for our use. This allows us to store more bales in less space, and we also save one man's labor on each shift.

## Moisture Is Recorded at Picker

We needed a device that would measure and record the amount of moisture in the stock at the picker calender rolls. There were several surplus Moisture-Graphs on hand.

We installed a unit, with slight modifications, on one of our pickers. The moisture-detector roll was set on the stock as it passed out of the top calender section. We found the Moisture-Graph to tally almost perfectly with the actual moisture in the lap found by laboratory test. Moisture in the picker stock ranges from a low of 4% to a high of 7%, regardless of weather conditions. This range is lower than that recorded by the indicator on the picker-room post.

## Systematic Creeling Cuts Cost

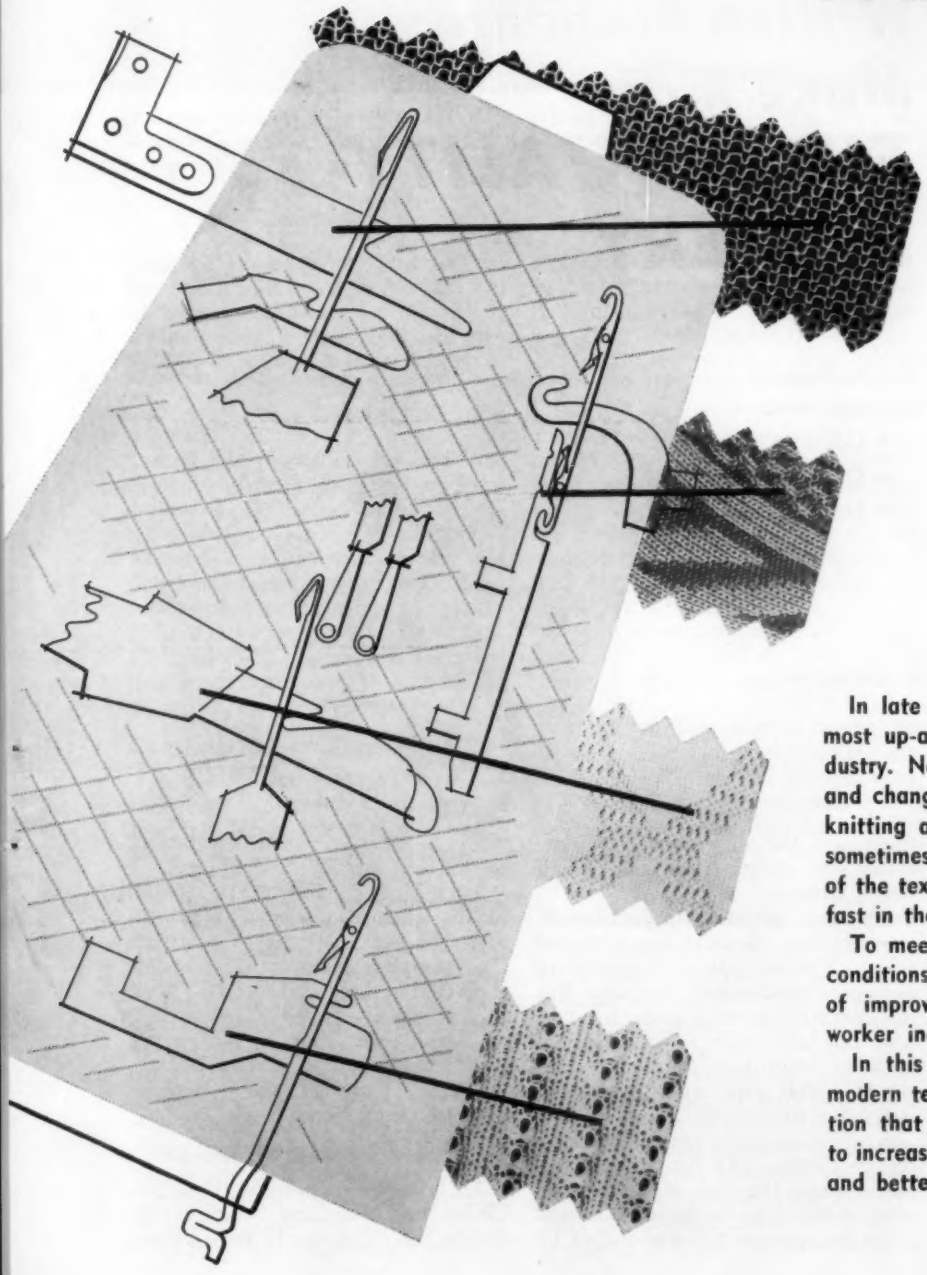
Our industrial engineers, setting up card tenders' jobs, became concerned about the manner in which the tender was continually dashing from the front of the cards to the back. It was suggested that when the first lap ran out, all pieces in that creeling be immediately broken out and replaced with full laps. It was estimated that the total amount of waste added to our regular lap waste would amount to a maximum of 3,000 lbs. per 120 hrs. At a cost of 1¢ per lb., this would be $30 per week. We made the changes, and the gains from allowing the tender to handle his maximum potential of cards far outweigh this small cost.

## Roving Frames Are Tested Daily

We have begun a different type of roving test. Two bobbins are taken from each of our roving frames daily, identified, and sent to Standards for sizing. The size is graphed on two forms. The first form is a frequency-distribution graph that goes to the overseer and the superintendent. The second graph is on an individual roving-frame size card. This form shows the daily average weights and whether or not they fall within the control area.

# MODERN KNITTING PRODUCTION

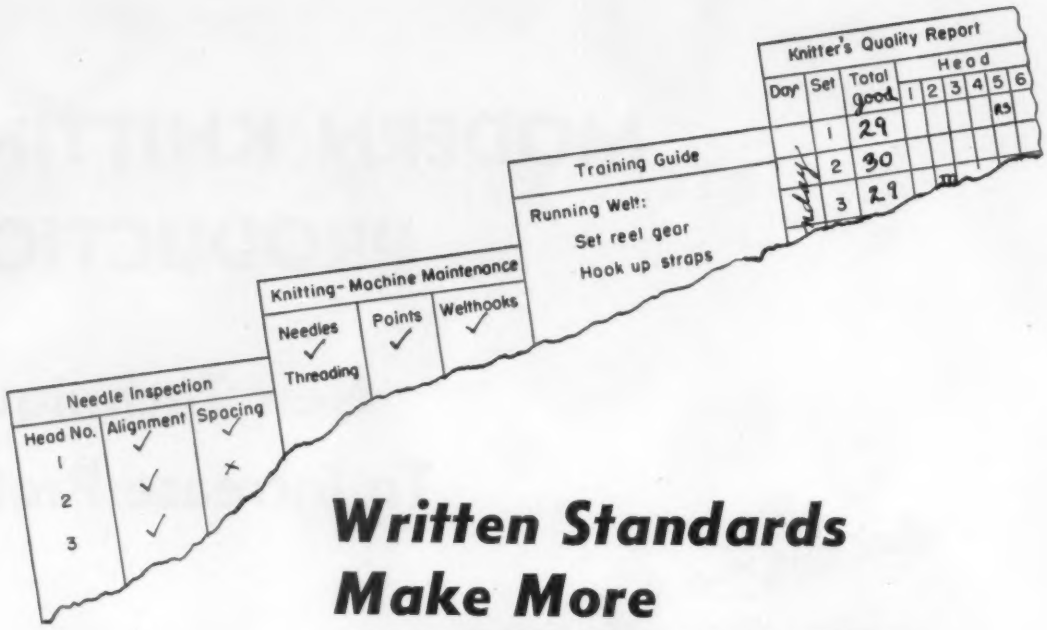
## New Techniques To Increase Profits



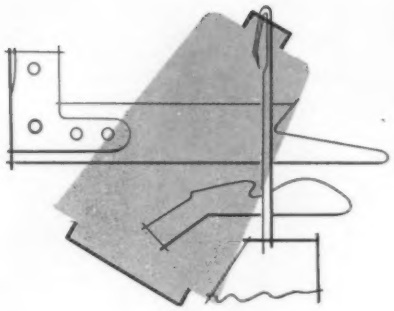
In late years, knitting has been one of the most up-and-down segments of the textile industry. New yarns, new styles, new machines, and changing customer preferences have made knitting a fast-changing, sometimes-uncertain, sometimes-lush business. Probably no other part of the textile industry has changed so much so fast in the last few years.

To meet the challenges of such competitive conditions, knitting mills have run the gamut of improvements in machines, methods, and worker incentives.

In this special knitting section, we present modern techniques of management and production that several knitting mills are now using to increase profits by better quality, lower costs, and better worker motivation.




# Written Standards Make More FIRST-QUALITY HOSIERY



**Standard-operating-procedure schedules written in easy-to-understand language cover—**

- **Operator training**
- **Quality control**
- **Machine maintenance**

**By JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

A QUALITY-CONTROL SYSTEM linked closely with training and maintenance programs plays a big part in producing high-quality full-fashioned hosiery at Virginia Maid Hosiery Mills, Inc., Pulaski, Va. Standards of procedure are laid out and distributed to personnel to make the system work smoothly with a minimum of supervisory staff.

## Forms Help Spot Trouble

The forms used to operate the system are used as tools of production to spot trouble and to take corrective action. The system is operated to reward workers rather than penalize them, and the what's-wrong attitude is stressed rather than the who's-wrong attitude.

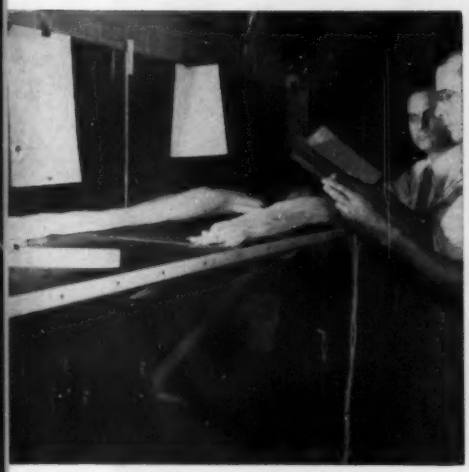
Operators keep the standard-operating-procedure schedules in a loose-leaf folder. The schedules are written in a simple-to-understand language. For instance, the training guide for running the welt reads: "Set reel gear; hook up straps; turn bands into position for welt rods; insert welt rods in front of strap hooks."

A checklist is also supplied to each trainee knitter. This list covers maintenance and the care of needles. A progress report on the trainee is turned in by the supervisor at the end of 13 weeks to keep management informed on training methods and trainees.

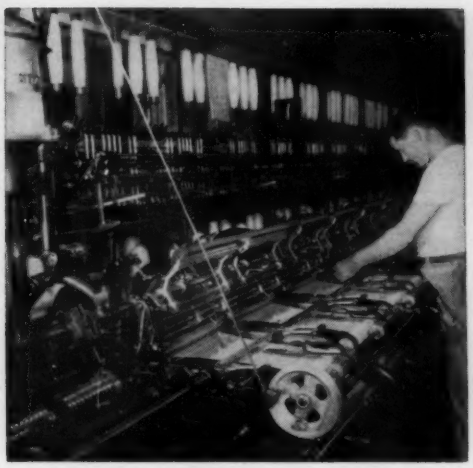
Each knitter maintains 10 sections of his assigned machine. He looks after the same sections at all times. The complete maintenance schedule is covered in three weeks; and 30 mins. each Friday is devoted to such points as cleaning the tops of yarn boxes, front-trough eyelets, tension holders, and rings. Parts that the yarn passes over are cleaned each week.

## Supervisor Checks Cleaning

Each item is checked on the schedule by the knitter, and the supervisor checks the cleaning. If the cleaning



STANDARD OPERATING PROCEDURES are kept by each knitter in a loose-leaf file.



KNITTING MACHINES are kept in first-class condition because maintenance rules are followed on charts. Each knitter maintains 10 sections.

SELVAGES AND TOES are checked in the knitting room with the aid of a glass iron.

does not come up to standard, the machine is shut down on Monday until the work is done.

Observance of these rules has kept machine performance high. Machines that have been in place for as long as seven years are still in first-class operating condition.

A needle inspection on each machine is made by the supervisor two or three times each year during periods when the machines are shut down. A chart serves as a scoreboard, and marks are scored against such things as poor needle alignment and spacing. If the score is poor for any one section, the head must be corrected. The section is corrected by the knitter and rechecked by the supervisor.

### Checklist Saves Time

A checklist for setting automatic attachments has reduced the time of this job from several hours to 15 mins. To standardize on machine-part names, the machine builder's catalogs were consulted and these names used throughout the schedules.

A machine-damage report is made out when a smash occurs. The cause of the smash, the knitter concerned, and the repairs done to the machine are entered on the report. Corrective action is taken to prevent a recurrence of the same damage.

A style card, kept on each machine, shows such things as the style number, the length, and the leg counter. On the back of the card is the procedure for setting up the machine.

When style changes are made, a checklist is filled in and turned in to the supervisor with the time and date of the change. The supervisor can then check on what work has been done and spot any errors before faulty work is made.

A constant record of faults from his machine is kept by each knitter. The record shows each set taken from each head each shift. The fault names are abbreviated and entered on the squares on the record. These charts are examined each week by the supervisor, and faulty heads and machines are quickly recognized.

Fabric appearance at Virginia Maid is treated with great attention. One stocking from each head is examined each week.

The fabric is checked for streaks, distorted stitches, improper rocker, and loaded loops inside the selvage. The stitches and wales are counted before boarding and after boarding. Stitch adjustment is made if the fabric is not balanced.

### Standards Determine Imperfects

Imperfect stockings are determined by written standards. These standards were made by checking on the final product and through various stages of manufacture.

Knitters and seamers were consulted when the standards were laid down. These operators proved good salesmen when the standards were introduced. Written standards for imperfects treat all workers alike and set a rigid pattern for quality.

About 20% of the production is given an iron-out check to help knitters spot selvage troubles. Three tables covered with black felt are positioned close to the knitting machines for this check.

A glass iron is used to smooth out the stockings while they lie on the table. Inspectors are supplied with a faults manual; and particular attention is paid to threads out, denier changes, load-ups, runs, and drop stitches.

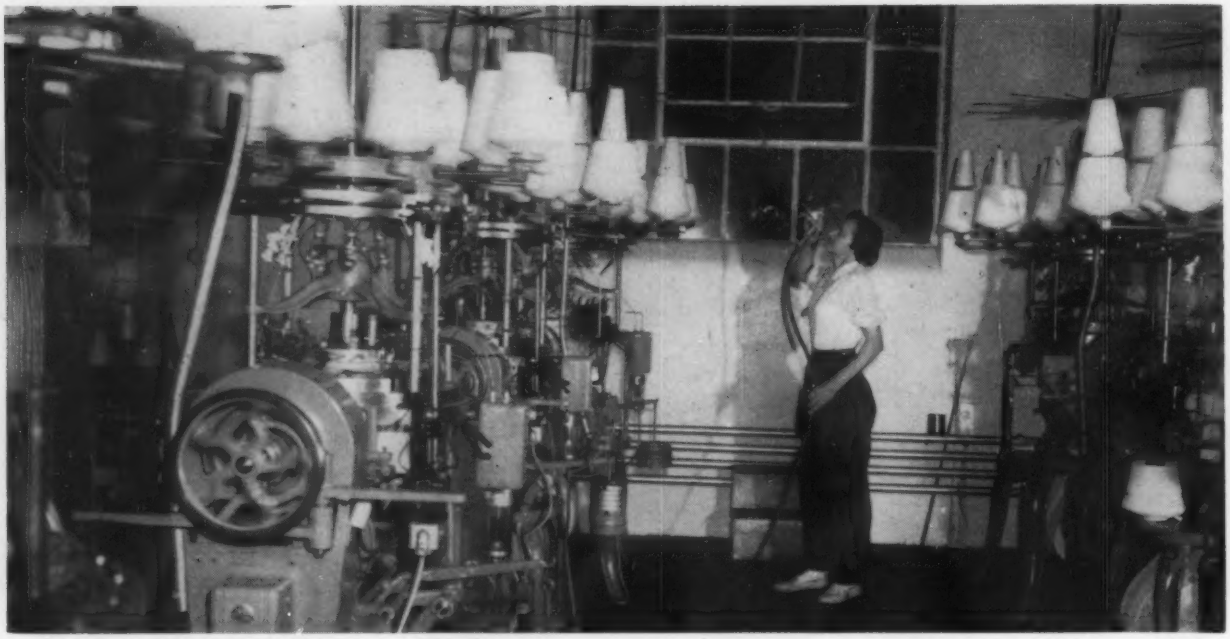
### Length Checks Made Weekly

Weekly length checks are an integral part of the quality-control system. The gray goods from each machine are checked weekly. Finished goods are checked every two weeks.

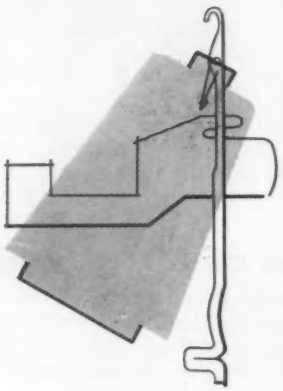
The standard deviation is calculated, and machines are adjusted if the tolerance is exceeded. After each length adjustment to any machine, a recheck for length is made.

To test crooked heads, a 2-doz. bundle is picked up twice each week from each machine at the end of the third shift. Each stocking is marked with the head number. The bundle is seamed by the same seamer who reports tight selvages. Stockings that are difficult to seam are tested on the selvage tester.

The operating manuals used in the system have not only helped management but have also aided workers by showing what is expected of them. Better products have resulted from the system because work can be analyzed and workers can be coached on better methods.



DOUBLE-TIED CONES are used on rotating-head machines. Air units blow cam sections clean every 2 mins.



# Rebuilt Machines Give 90% KNITTING EFFICIENCY

**Circular rib knitting machines are brought up to date with—**

- Additional feeds
- Double-cone attachments
- Fabric hole detectors
- Lint cleaners
- Individual drives
- Inside fabric lights

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

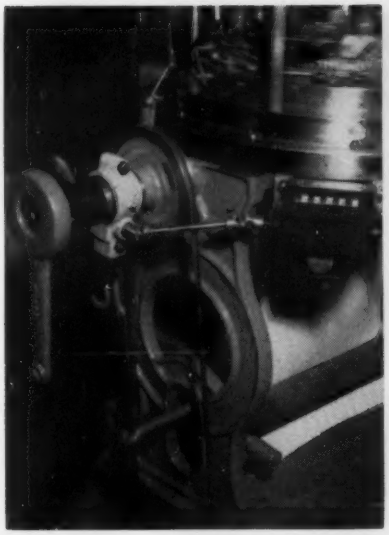
CIRCULAR RIB KNITTING MACHINES at the Parsons & Baker Co., Phoenixville, Pa., are undergoing a face lifting. Scott & Williams machines with a low number of feeds are returned to the machine builder, where they are completely rebuilt.

New attachments on the machines have brought the machines up to date to help keep knitting efficiency high. Quality is also improved with the aid of the attachments.

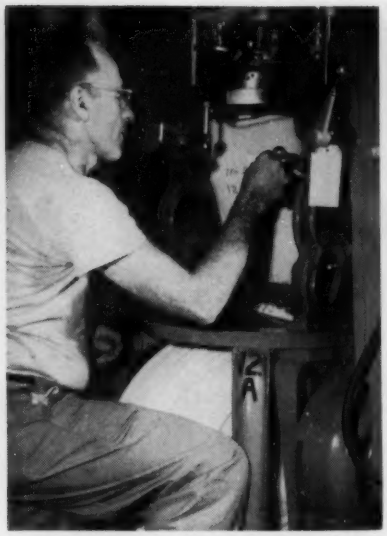
## Double Cones Are Used

Double-tied cones are used on the rotating-head machines to reduce yarn waste, press-offs, and machine stops. This practice is made possible by Roto-Tie devices.

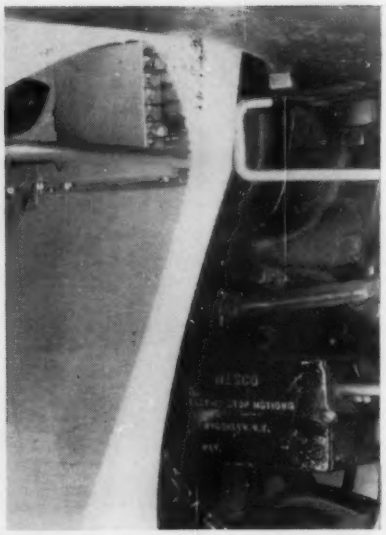
The Roto-Ties, consisting of two major parts—the bottom spindle and the top bobbin and spindle—are fixed to the knitting machines by the mill's fixers. The fixers remove the pegs from the bobbin stands and drill a ⅜-in. hole in the center of the stand. The lower Roto-Tie spindle is entered



**FREE-WHEELING HANDLE** makes turning the machines easier. Predetermined-stop counters help control roll lengths and quality.



**CLOTH ROLLS ARE MARKED** at each end with symbol to simplify production- and quality-control records and prevent mistakes.



**HOLE DETECTOR** under the dial keeps fabric faults below 8 ins. in length. One of the six fingers feels out the fault.

through the hole and locked with a nut.

The top spindle is adjusted to about three-quarters of the way up the spindle to take care of 9.15° yarn cones. The position of the top bobbin is adjusted with a setscrew. The top spindle is locked to the lower spindle.

When the knitter replaces a new yarn package, she stops the machine and removes the empty cone. The top bobbin is removed by twisting it out of the locked position. A full cone is placed on the lower bobbin, and the top-bobbin spindle is pushed through the top of the cone and locked in place.

A part cone is then placed on the top bobbin, and the ends of both cones are tied together. Although the 12-in.-dia. machines rotate at 50 rpm., the yarn cones stay rigid on the bobbin stands and do not tilt.

The yarn-stand pillars were lowered about 4 ins. by the machine builder to bring the slub catchers within easier reach of the operators.

### Detectors Keep Faults Low

The rebuilt machines have been equipped with Wesco Guardian hole detectors, which keep faults due to bad needles down to 8 ins. in length. The detector has six spring fingers that rotate on the dial shaft.

The fingers feel the fabric for holes and drop stitches. When a finger pushes through a defect, a lever fastened to the top ring is moved out of position. This lever operates a limit switch, which is connected to the stop-motion controller.

A ring supports the fabric where the feelers operate. The hole detector is adjusted to an angle for swiss-rib fabrics.

### Feeds More Than Doubled

Cam sections have been modified to allow one feed per diametrical inch. Machines of 20-in. dia. that were originally equipped with eight feeds now have 20 feeds; so production is more than doubled.

A Scott & Williams cleaning device has been attached to each rebuilt machine to help keep machines free from lint. The device is timed to blow off the rotating cam sections every 2 mins. The air blast lasts for 7 secs. The device has relieved the knitter of cleaning duties and has cut down on bad work.

The 100-psi.-ga. air supply line runs under the knitting-room floor. Outlets are provided under the knitting machines. The pipe lines run up the machine legs to the blowing-off device. An air filter on each device removes the moisture from the air so that dry air is blown over the machine to prevent corrosion on the machine parts.

Ridges about $\frac{1}{4}$ in. deep are cut around the periphery of the take-up rolls about $\frac{1}{4}$ in. from the end of the rolls. These ridges prevent oil seeping along the rolls from the take-up gears to soil the fabric.

### Counters Help Quality Control

Veeder-Root counters have been installed on each machine. The counters are predetermined-stop counters to assist in controlling quality and fabric-roll lengths.

The counter automatically stops the machine when a predetermined number of yards have been knitted. The cloth roll is weighed, inspected, and measured. The yield is determined, and the machine and yarn are checked if the weight per yard is out of tolerance.

The counter is mounted on the top ring near the drive shaft. It is driven from a split worm anchored to the drive shaft. The worm drives a worm wheel and a universal joint that is connected to the counter.

Individual drives have been put on each machine to further improve efficiency in the knitting room. The motors are 1-hp. pancake-type motors that occupy little space under the drive shaft. The drive shaft is driven by a cog belt that eliminates slippage. Serious damage to the machine is prevented, however, because the cogs will give if a machine should lock.

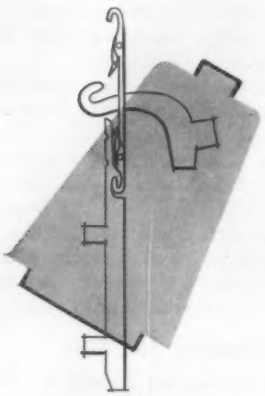
### New Handles Are Safe

A free-wheeling handle is now replacing the fixed wheel that is prevalent on the old machines. The new handle takes up less space. Knitters and fixers find the machine is easier to turn, and there is no danger of fingers getting caught.

A number is painted on the leg of each machine to simplify production- and quality-control records. The machine size is included in the machine number. The machine number is indicated on the knitting instruction ticket and on each end of the roll to prevent mistakes in handling.

In spite of the increase in feeds, the addition of modern attachments and the methods used at The Parsons & Baker Co. have retained the use factor and kept efficiency on the rebuilt machines from 85 to 90%.

FIXER AND KNITTER work more closely because the fixer's bonus depends upon the knitter's production and quality.



# FIXER-INCENTIVE System Cuts Bad Work 35%

**A system that rewards circular-knitting-machine fixers at Triangle Hosiery Co. is based upon records of—**

- **Bad work**
- **Production per machine hour**
- **Waste**
- **Needle usage**

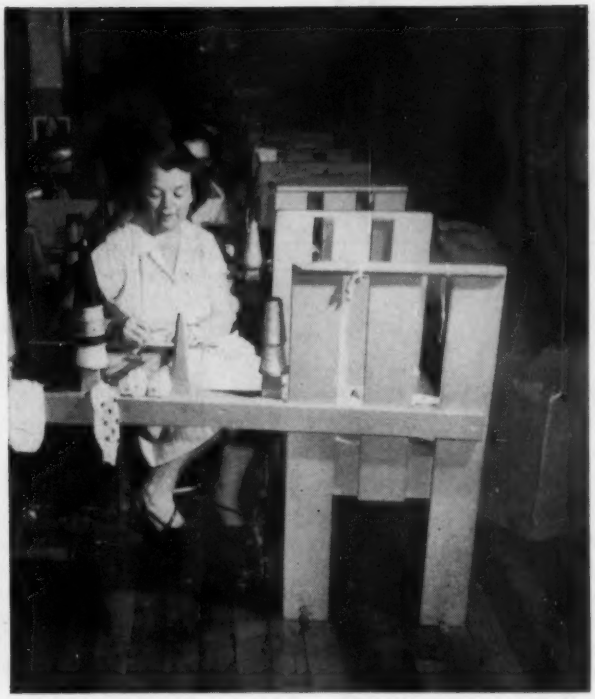
By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

TRIANGLE HOSIERY Co., High Point, N. C., is making substantial savings and obtaining higher-quality products than ever before by rewarding fixers and knitters for quality production. The system does not penalize fixers if production is low.

Since the system was installed last spring, bad work has been cut 35%.

Foremen and floor fixers also share in the plan by receiving a bonus based on the weekly production of the de-

**CHAIN LINKS** are counted by Leonard Hughes, who also timestudies the machine to calculate the production standards.



**INSPECTOR** enters faulty goods on the knitting ticket. The quality production figures are calculated from this ticket.

partment. Leonard Hughes, with one assistant, compiles the records and operates the system. President N. M. Ayers checks the records weekly to tell at a glance production and quality trends.

Data are collected from knitters' production, waste, and needle-breakage reports to obtain points. These points are then credited to the fixers, and the bonus is based on the point score. The data also show the rating of the fixers, and this rating is displayed on the bulletin board. The point scores are based on monthly periods.

### Timestudies Show Standards

Production standards are based on machine hours. These standards are obtained from timestudies and chain-link counts. The 100% production is calculated from pulley sizes and shaft revolutions per minute. There is 0.4% time allowed for belt slippage. Each set of machines has its own standard machine hour.

Waste standards are based on figures taken over a four-year period, and different styles have their own standard waste allowance; for instance, waste from argyle machines has a higher standard than waste from Komet machines.

Needle-breakage allowance is also based on records over a four-year period. To obtain an allowance for needle breakage, the needles that are used are calculated at their respective costs.

### Inspector Determines Quality

All socks at Triangle Hosiery are inspected immediately after knitting. The inspector sorts the hosiery into firsts, seconds, thirds, poorly looped and poorly plaited socks, and socks with holes. Minor faults are repaired.

The inspector enters these faults on the work ticket, tears off the stub for payroll records, and sends the ticket to the standards-control office. From these tickets, the quality production figures are rapidly calculated by machinery.

The standard time to knit 1 doz. is known, and the time to knit the whole batch is calculated. The actual production is compared with this figure, and a production efficiency is obtained. Overtime is allowed for, and the knitting of various styles by the same knitter is accounted for.

### Waste Is Collected Each Shift

The ounce weight of the weekly production is calculated by multiplying the production by the weight of 1 doz. The waste from each set of machines is collected at the end of each shift, and the total at the end of the week is sent to the standards-control office.

The actual waste is calculated as a percentage of the total production weight. This percentage is compared with the standard waste allowance for the socks knitted. If the actual waste is lower than the standard, points are awarded and a bonus is paid.

The weekly production from each set is multiplied by a percentage figure, which is based on the needle cost. This total is the needle allowance for that set.

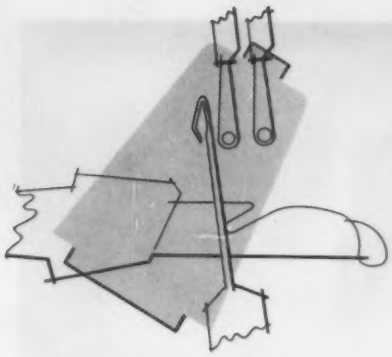
The parts man tallies needles for each set that each fixer draws from stock. He records the date and sends the record in to the standards-control office at four-week periods. If the needle breakage is lower than the allowance, a bonus is paid.

### Faulty Work Is Displayed

The system does not penalize the fixer for bad work; but if exceptionally bad work is found by the pairers, the faulty socks are withdrawn from the lot. A report sheet is made out in duplicate; and the socks are sent to the knitting room, where they are displayed on a table and examined by the knitters and fixers.

The original report accompanies the goods, and the duplicate goes to the quality-control office.

This system at Triangle, installed by Warren S. Nichol, has increased production and knitting-room personnel's take-home pay. The plan has developed a high degree of teamwork by the entire knitting department, since good teamwork nets maximum bonuses.



# How a Tricot Mill Tackled WARPING PROBLEMS

**● Cooper Textile Mills improved quality, increased efficiency and production, and lowered its manufacturing costs of tricot and raschel fabrics with new handling methods and warping techniques.**

**By E. BARTON** Superintendent, Cooper Textile Mills, Wycombe, Pa.

At Cooper Textile Mills, Wycombe, Pa., we are meeting the challenge of keen competition with new warp-knitting techniques. We studied our methods carefully and came up with these ideas that have improved quality, increased production, and reduced overhead costs.

We started with a study of raw-materials handling and found that our handling methods were far from efficient.

Unloading yarn cases took too much time and effort; so we mechanized the operation with a Wilkie roller-type conveyor.

This conveyor, which opens up to 30 ft. and closes to 10 ft., is adjustable to 5 ft. high at the receiving end and lowered to 2 ft. at the delivery end. We receive yarn in several different types of case, and we adjust the conveyor to suit the case or carton.

## Unloading Time Cut 100%

A load of yarn that usually took three men one hour to unload and stack now takes 25 mins. As the cases are not dropped, the yarn is not bruised and is in better condition for warping.

When the stacking is completed, the conveyor is located at the back of the creels. The yarn is then ready for the creel operator to move the yarn from the conveyor to a position at the rear of the creel ready for loading.

Our fabric faults due to warping were reduced because we closely studied our warping operation and decided to install some improvements in the creel.

Strip lighting down the center of each creel in addition to the standard type of lighting on each side of the creels enables the creel operators to see all the ends with equal light intensity. The operators make a better job of tying in, especially in tying over top to tail.

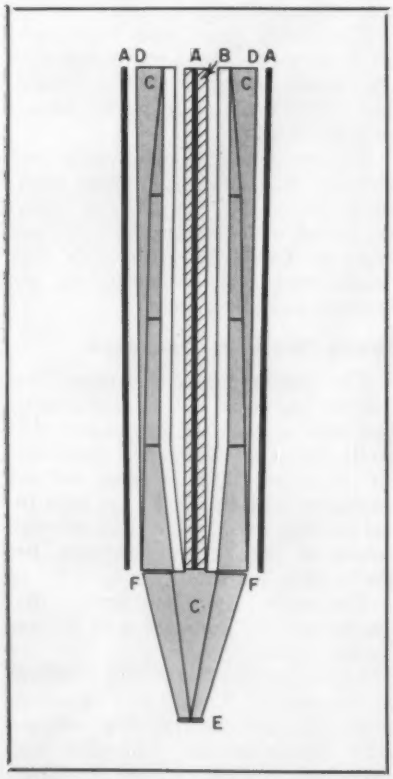
We still had split ends near the knots; so we provided our creel girls with hand cream and see that their fingernails are kept trimmed. Black nylon gloves reduce this trouble to a minimum when we run low-twist yarn.

We notice that most of our female operators had difficulty reaching the top two rows of yarn in the creel; so we provided them with stools. The stools are easy to move around because they are aluminum. The stools have rubber tops for safety.

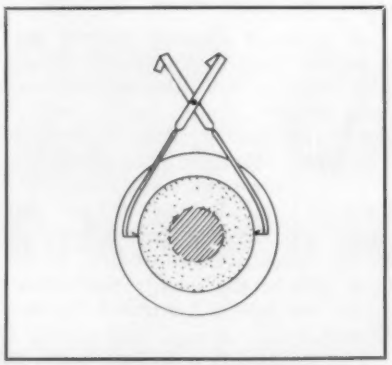
## Rubber Mat Reduces Fatigue

We reduced fatigue among our creel operators with a rubber mat that stretches the inside length of the creel. The rubber mat also keeps down the dirt and dust from the concrete floor. We found it necessary to clean the floor practically every day before the rubber-mat installation, but now we clean twice weekly. A rubber mat in front of each warper saves damage to the spool flanges when the spools are removed from the warper.

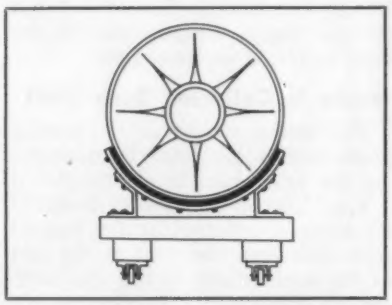
We increased warper efficiency by painting parts of the floor with a black




**CREEL IMPROVEMENTS include strip lighting *A*, rubber mats *B*, and black rubber-base paint *C*. *D* is the line of threads, *E* is the eyelet bar, and *F* is the front eyebar.**



**CALIPERS are used to determine the length and the weight of yarn left on the spool. The calipers are used in conjunction with the scales.**



**SPOOL HANDLING was improved with this truck. The curved support has a 2-in. leather belt cemented to it to protect the spool flanges.**

| 40-den. nylon 586 ends Diameter readings | | | | | |
|---|---|---|---|---|---|
| Yards | Dia. (ins.) | Yards | Dia. (ins.) | Yards | Dia. (ins.) |
| 0 | 7 5/8 | 5,500 | 10 3/4 | 11,000 | 13 7/16 |
| 250 | 7 13/16 | 5,750 | 10 7/8 | 11,250 | 13 9/16 |
| 500 | 8 | 6,000 | 11 | 11,500 | 13 5/8 |
| 750 | 8 3/16 | 6,250 | 11 1/8 | 11,750 | 13 11/16 |
| 1,000 | 8 3/8 | 6,500 | 11 1/4 | 12,000 | 13 3/4 |
| 1,250 | 8 9/16 | 6,750 | 11 3/8 | 12,250 | 13 7/8 |
| 1,500 | 8 3/4 | 7,000 | 11 1/2 | 12,500 | 13 15/16 |
| 1,750 | 8 13/16 | 7,250 | 11 5/8 | 12,750 | 14 1/16 |
| 2,000 | 9 | 7,500 | 11 3/4 | 13,000 | 14 3/16 |
| 2,250 | 9 1/8 | 7,750 | 11 7/8 | 13,250 | 14 5/16 |
| 2,500 | 9 1/4 | 8,000 | 12 | 13,500 | 14 3/8 |
| 2,750 | 9 3/8 | 8,250 | 12 1/8 | 13,750 | 14 7/16 |
| 3,000 | 9 1/2 | 8,500 | 12 1/4 | 14,000 | 14 1/2 |
| 3,250 | 9 5/8 | 8,750 | 12 3/8 | 14,250 | 14 9/16 |
| 3,500 | 9 3/4 | 9,000 | 12 1/2 | 14,500 | 14 5/8 |
| 3,750 | 9 7/8 | 9,250 | 12 5/8 | 14,750 | 14 11/16 |
| 4,000 | 10 | 9,500 | 12 3/4 | 15,000 | 14 3/4 |
| 4,250 | 10 1/8 | 9,750 | 12 7/8 | 15,250 | 14 7/8 |
| 4,500 | 10 1/4 | 10,000 | 13 | 15,500 | 15 |
| 4,750 | 10 3/8 | 10,250 | 13 1/8 | 15,750 | 15 1/8 |
| 5,000 | 10 1/2 | 10,500 | 13 1/4 | 16,000 | 15 1/4 |
| 5,250 | 10 5/8 | 10,750 | 13 3/8 | | |

**WEIGHT of tricot warps can be calculated from this scale. If a spool with 16,000 yds. weighed 84 lbs., a 12-in.-dia. warp weighs 42 lbs.**

| 30-den. nylon 489 ends Diameter readings | | | | | |
|---|---|---|---|---|---|
| Yards | Dia. (ins.) | Yards | Dia. (ins.) | Yards | Dia. (ins.) |
| 0 | 7 5/8 | 5,500 | 9 3/4 | 11,000 | 11 9/16 |
| 250 | 7 11/16 | 5,750 | 9 7/8 | 11,250 | 11 11/16 |
| 500 | 7 13/16 | 6,000 | 10 | 11,500 | 11 3/4 |
| 750 | 7 7/8 | 6,250 | 10 1/8 | 11,750 | 11 13/16 |
| 1,000 | 8 | 6,500 | 10 3/16 | 12,000 | 11 7/8 |
| 1,250 | 8 1/8 | 6,750 | 10 1/4 | 12,250 | 11 15/16 |
| 1,500 | 8 1/4 | 7,000 | 10 5/16 | 12,500 | 12 |
| 1,750 | 8 3/8 | 7,250 | 10 7/16 | 12,750 | 12 1/16 |
| 2,000 | 8 1/2 | 7,500 | 10 1/2 | 13,000 | 12 1/8 |
| 2,250 | 8 3/4 | 7,750 | 10 9/16 | 13,250 | 12 3/16 |
| 2,500 | 8 11/16 | 8,000 | 10 5/8 | 13,500 | 12 1/4 |
| 2,750 | 8 13/16 | 8,250 | 10 3/4 | 13,750 | 12 5/16 |
| 3,000 | 8 7/8 | 8,500 | 10 13/16 | 14,000 | 12 3/8 |
| 3,250 | 9 | 8,750 | 10 7/8 | 14,250 | 12 7/16 |
| 3,500 | 9 1/16 | 9,000 | 10 15/16 | 14,500 | 12 1/2 |
| 3,750 | 9 3/16 | 9,250 | 11 1/16 | 14,750 | 12 9/16 |
| 4,000 | 9 1/4 | 9,500 | 11 1/8 | 15,000 | 12 5/8 |
| 4,250 | 9 5/16 | 9,750 | 11 3/16 | 15,250 | 12 11/16 |
| 4,500 | 9 7/16 | 10,000 | 11 1/4 | 15,500 | 12 3/4 |
| 4,750 | 9 9/16 | 10,250 | 11 3/8 | 15,750 | 12 13/16 |
| 5,000 | 9 5/8 | 10,500 | 11 7/16 | 16,000 | 12 7/8 |
| 5,250 | 9 11/16 | 10,750 | 11 1/2 | | |

**SCALE for 30-den. nylon yarns with 489 ends is used to determine the length and weight of yarn on each spool.**

rubber-base paint. We painted a 2-ft. strip the length of the creel underneath the warp threads.

The space under the threads between the front eyebar and the eyelet board was also painted black. Slubs and waste can be better spotted by the warper before they reach the warp, operators eyestrain is relieved, and the operation is easier to keep clean.

## Warpers Are on Rails

We've found that a warping unit with three warpers and four creels pays off when room is available and more than one type of yarn is run. The warpers are mounted on rails so that they can serve one or two creels.

This system is particularly useful in warping fancy fabrics with mixed yarns, such as nylon and Dacron, or half-threaded warps. Full production is obtained from three creels while the fourth is being prepared.

For instance, Creel No. 1 would be on 40-den. nylon and threaded 1 in 1 out. Creel No. 2 is being filled with 70-den. Dacron. Creel No. 3 is on 40-den. nylon and is fully threaded. Creel No. 4 is constantly running 40-den. nylon. The first warper can be readily switched from half-threaded 40-den. nylon to fully threaded 70-den. Dacron by traversing the warper to No. 2 creel. No. 1 creel can then be changed to a fresh yarn or style.

Although our temperature and humidity are controlled at 80° F. and 60% r.h., we found static eliminators helped us a lot. We got the best results by installing a unit of 20 Simco tubes on the front eyebars ¾ in. below the line of threads. This installation helped us to get very even warps with no ridges.

We found that dirt particles embedded in the felt covering on the pressure roll damaged yarn during warping. To prevent this damage, we replace the felt covering every six months. We also clean the covering each week by brushing it first with a nylon nail brush and then cleaning it with carbon tetrachloride.

We saved time in taking inventory of warps in the machine with a caliper. We previously used the yardage-ticket method. A ticket was placed in the first spool of the bottom warp at 1,000-yd. intervals, and these tickets were recorded on the knitting production card. Occasionally these cards were missed by the operator and dropped into the guide bars to cause a smash.

The caliper is made from ¼x⅛-in. steel and has spring-steel tips to measure the yarn on the spools. The caliper is used with a scale to determine the length of yarn on each 21x21-in. spool of 40-den. or 30-den. nylon.

We made the scales by first measuring the diameter of the spool barrel before warping. The warp diameter was measured with the calipers at the end of each 250-yd. length of warp put on the spool.

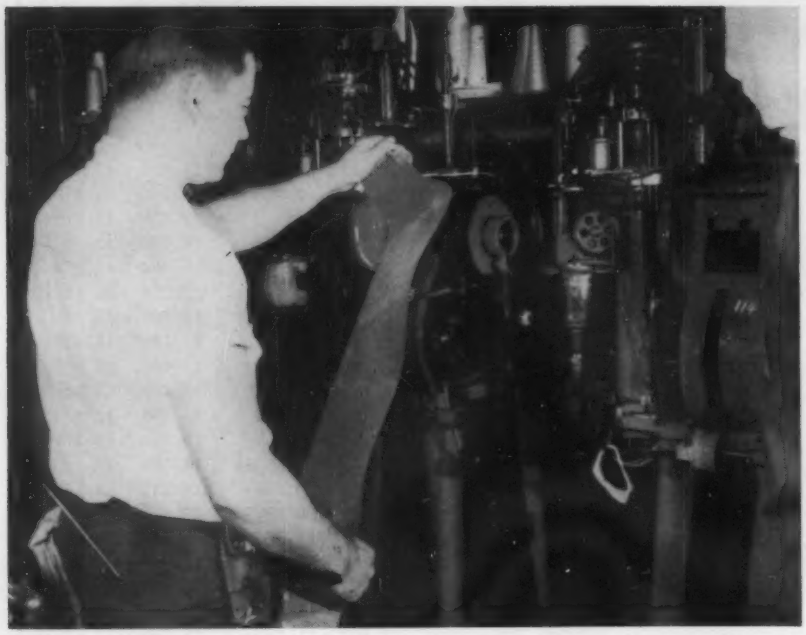
We converted the yarn length to weight by weighing the full set of eight spools. The proportion of the inventory spool to the standard spool length of 16,000 yds. gives us the weight of the yarn on the spools. For instance, if a 16,000-yd. warp of 40-den. nylon with 586 ends weighs 84 lbs. and has a diameter of 15¼ ins., a 12-in.-dia. spool would contain 12,000 yds. and weigh 42 lbs.

## Spools Are Treated Better

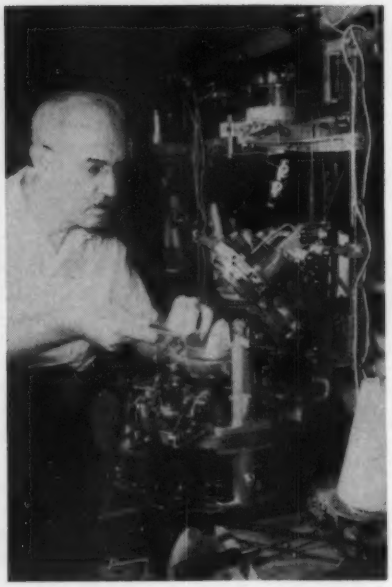
Transportation of warps to the storage assembly and assembly areas was improved with a specially designed truck for our 21x21-in. spools. A curved mounting, which supports the beam flanges, is made from a 2x⅛-in. flat metal base. A length of 2-in. leather belt cemented to the mounting protects the beam flanges.

An I-beam with electrically operated pulley blocks allows one man to handle the warps easily. A 1-in. rod is inserted through the bore of the spool as it is released from the warper. The rod is connected to an angular steel support and the spool lifted onto the handling truck.

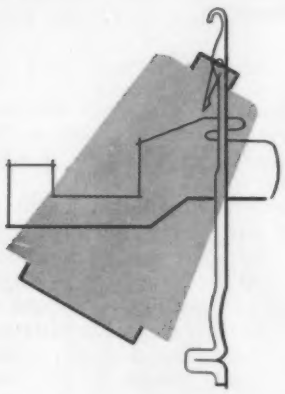
These improved methods of handling are paying off and helping us to produce a better product.



QUALITY FIXER pulls a stocking on a black form to check for needle and sinker streaks.



NEEDLES are straightened by a highly skilled fixer who concentrates solely on streaky hosiery.



# Quality Control Is a Must For 474-Needle HOSIERY

**● The first installation of 474-needle hosiery machines is producing top-quality work because highly skilled fixers and knitters concentrate on specialized jobs.**

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

KNITTERS AND FIXERS at Cape Hosiery, Inc., Jackson, Mo., are all highly skilled men who concentrate on inspection programs and constant maintenance of machines to get top-quality fine-gauge seamless hosiery. Streaky hosiery is kept to a minimum by two quality fixers who concentrate on needle and sinker maintenance.

These methods help to run the first installation of 474-needle Scott & Williams machines successfully. There are 20 of these machines in operation along with 120 400-needle machines.

Each knitter looks after 30 machines, and his chief job consists mainly of inspection. One fixer with a helper looks after 60 machines. The two quality fixers have a roving commission to work on all machines.

The quality fixers are called by a knitter or production fixer to a machine where a needle streak is prevalent. A streaky stocking is pulled on a form, and the streaky area is examined.

## How Streaks Are Eliminated

About 20 needles are pushed up to the heel and toe level in the area of the streak. A piece of white cloth is laid in the cylinder to serve as a backdrop. Needles are lined up with pliers, and hooks are checked.

An opened-out hook makes a tight stitch. Needles with these hooks or stiff latches are replaced with new needles. If the new needle produces a streak, it is placed in another slot. Needle breakages amount to about 2 doz. stockings per needle.

If streaks still prevail, the sinkers are blown out with the air hose. Sinkers from different boxes are never mixed.

**ALL STOCKINGS are drawn on the form for examination by the knitter, who also clips threads.**

**STRETCH is checked on this mill-made instrument twice each shift by a production fixer.**

**GRAY INSPECTING is done while the stocking is expanded. A special inspector sorts mends.**

Cylinder walls, sinkers, and jacks are oiled regularly every 12 hrs. by the production fixers. An inspection is given each machine each year. The needle and sinker cam are checked for wear, and the timing is checked at this time.

### New Yarns Are Dye Checked

A dye check is made on different lots of yarn from throwsters. A set of 3-doz stockings made from the new lot of yarn is sent through the mill and compared with a similar batch made from the original yarn.

One sample stocking is taken from each machine each week and dyed a dark shade. These stockings are drawn on a white form and checked for needle streaks and shadows. They are graded according to their quality, and a machine that produces a streaky stocking is checked by the quality fixer.

Each stocking is drawn on a form by the knitter as it leaves the knitting machine. Several tables with these forms are arranged down the aisles between sets of machines.

The tables are made in the mill workshop from 2-in. pipe and have smooth black ebonite tops. The forms are fixed to the side of the table, and they can be rotated for close inspection.

### Knitters Don't Touch Legs

The stocking is drawn on the form by the welt. Although knitters wear nylon gloves, they are not allowed to touch the legs of stockings. The knitter clips off the lap threads while the stocking is on the form. He takes the wrinkles out of the welt and turns the stocking for looping. Stockings are sorted out on the tables according to the size and style.

Knitters wear a crayon fixed to a band on their little fingers. The welts are marked with the colored crayon as they are laid on the table. Each shift uses a different-colored crayon.

An additional mark, which allows each stocking to be traced to its machine, is made by a series of tuck stitches in the welt. These tuck stitches are made by the pattern jacks in three series. Machine No. 123 would be denoted by one tuck stitch in the first series, two tucks in the second series, and three tucks in the third series.

Each 1-doz. lot of stockings is wrapped in cloth, tied in 5-doz. lots, and hung on a handling truck for presetting. Microfilm stockings are laid in trays for normal processing.

### Size Checked Twice Each Shift

Production fixers check each machine for size twice during each shift. A machine built by the mill applies tension at the welt, flare, and ankle. A reading is taken from a quadrant; and any deviation from standard is recorded on a chart, and adjustments to the knitting machine are made. Recording is done to $\frac{1}{8}$ in. The percentage deviation is calculated on each set and checked with the following set.

The production fixer also checks quality each shift. He examines the stockings on a form for such details as poor looping courses, long laps, and streaks missed by the knitter.

To guard against size and length changes that drift slightly over a period of time, one stocking from each machine is looped and sent to the finishing plant each week. If size changes are necessary, the changes are made by adding or subtracting links from the chain to give either more or fewer courses after the stretch has been regulated.

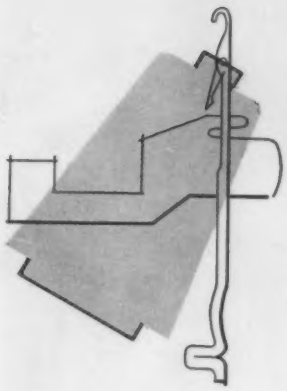
Looping-machine operators lay stockings in a tray with the welt toward the open part of the tray. All stockings are inspected after looping while they are expanded on a Textile Machine Works form. Perfects are placed in bags for Dunn System treatment, and imperfects are placed on the table.

### Inspector Determines Repairs

These imperfects are examined by a highly skilled inspector who determines whether the stockings can be repaired satisfactorily. She also sorts the stockings out according to the mending category.

A re-inspector checks about 20% of inspecting production. She reports on pulls, fisheyes, and other faults that have been missed by the mender.

With this rigid quality-control system, which may check some stockings four times before dyeing, management at Cape Hosiery has little fear of any other than top-quality hosiery leaving the mill.



# Better OUTERWEAR KNITTING With Plant-Dyed Yarns

**● By package dyeing its own knitting yarn, Electro-Knit Fabrics gets better control of yarn and fabrics, greater versatility in design, and faster production.**

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

TWO YEARS AGO, Electro-Knit Fabrics, Inc., Brooklyn, N. Y., installed package-dyeing equipment to dye its own knitting yarns. In addition to the advantages of a ready source of material for the knitting machines, a system has been worked out so that yarns and dyes can rapidly be checked in the finished fabric.

The mill buys carefully selected combed and carded yarns on dye tubes. Each tube holds 20 oz. of 16s or 18s yarn. One tube from each spinner's lot and for each dye lot is selected from the batch. The yarn on this package is dyed and knitted into fabric for a sample to be checked before the production batch is dyed.

### Sample Package Is Dyed

Dyeing of the single package is done on a sample package dyeing machine built by Smith, Drum & Co. The conditions in the sample machine are similar to those in the production machine. Records are kept by the dyer of the dyeing cycle, which lasts from 2 to 5 hrs., according to the shade.

After dyeing, the yarn on the dyed package is dried and wound onto 16 cones. These sample lots are all knitted on a Supreme jersey machine, which has been cut down to 16 feeds.

About 1 yd. of fabric is produced from the sample package. This fabric is personally inspected by Electro-Knit's president, Leon Teich, who checks the knitting qualities of the yarn, the fabric softness, and the shade.

The fabric is inspected for yarn faults and for foreign matter such as neps and seeds. If the quality is not up to standard, a new yarn is selected.

Production batches of yarn are dyed in Smith, Drum machines in 1,000-lb. batches. Each stainless-steel yarn carrier holds 500 lbs. of yarn. The carriers are easily handled by one man with an overhead crane and a special dolly to move the carriers.

The carriers are filled directly from the spinner's shipping carton to avoid unnecessary handling, and the packages are locked to the carrier with an electric tool.

### Vat Dyes Are Used

All vat dyes are used for the cotton yarns, and 32 different shades are dyed. A softener is used in the dyebath to improve knitting qualities and the final hand of the fabric.

Extracting is done by pressure for about 20 mins. The carriers are then moved to dryers where they remain for about 4 hrs. About 40,000 lbs. of yarn are processed each week.

After drying, the yarn packages are stripped from the carriers and placed in wooden trucks to be delivered to the winding section. Winding is done on Universal Roto-Coners.

There are two winding frames of 120 spindles each. Each winder operator tends 60 spindles. The yarn is cleaned on the winder and also treated with paraffin wax. The slub catchers are set at 0.018 ins. for 18s yarn to make sure that the yarn is perfect when it reaches the knitting machine.

A Parks-Cramer traveling cleaner runs on a U-shaped track over the winding frames to keep the slub-catcher units and the yarn on the creel free from lint.

The yarn is stored in cartons until required for knitting. Most knitting is done on Supreme striper and pattern-wheel machines with tuck bars.

A typical striped fabric is made on a stripe machine with 1-in. deep stripes of lemon, peacock, tangerine, fireman red, flamingo, and royal alternating with black stripes.

Chest stripes are made with the tuck-bar equipment. These striped fabrics are checked twice each roll by measuring the stripe repeat.

Lint is prevented from accumulating by blowing the machine down with the air hose at the end of each roll. The main air line runs under the floor, and an individual hose connection is situated under each machine drive. The air hose is plugged in the connection when required. This idea saves much air hose and keeps the knitting room tidy.

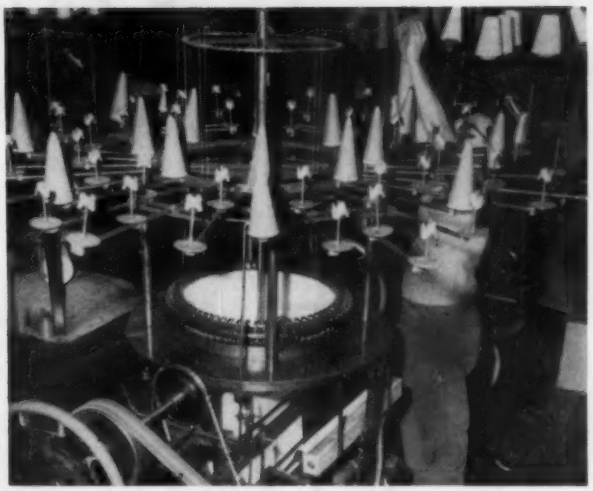
### Air Blast Helps Lubrication

The same hose is used to lubricate the knitting machines at the end of each roll. An oil pressure can is held to the tip of the hose, and a fine spray is directed at the needles.

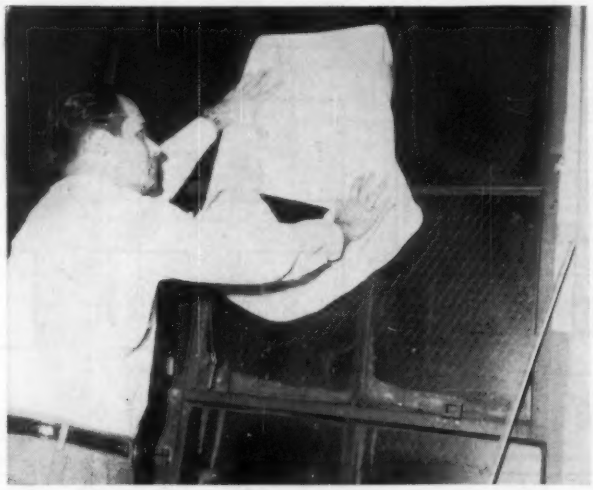
Fabric is checked for faults before it goes to the finisher. These faults are recorded. The fabric is checked once again when it is returned from the finisher.

Installation of dyeing equipment was a big decision for Electro-Knit officials, but they find that the decision pays off in these respects: (1) Exact yarn specifications to suit the knitting machines can be given to the yarn spinner. (2) The yarn is dyed and wound to suit the knitting machines. (3) There is no limitation to color combinations. (4) Fabric quality can be controlled more successfully. (5) No machine time is lost waiting for colors.

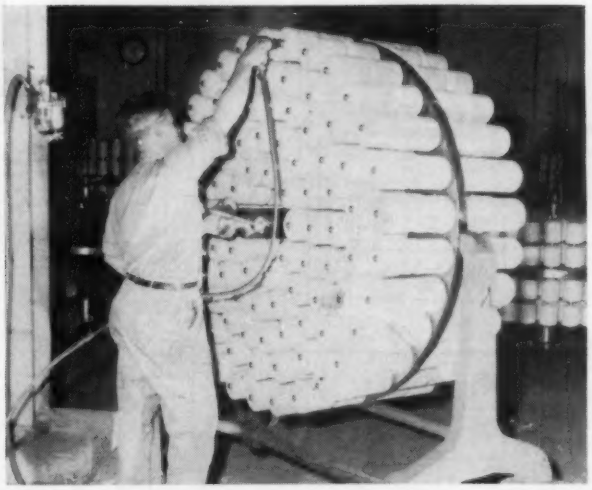
**1** SINGLE PACKAGE is dyed in this sample machine before each new yarn batch or dye lot goes into production.



**2** SMALL CONES are made from the single package and knitted into jersey fabric on a 16-feed machine.

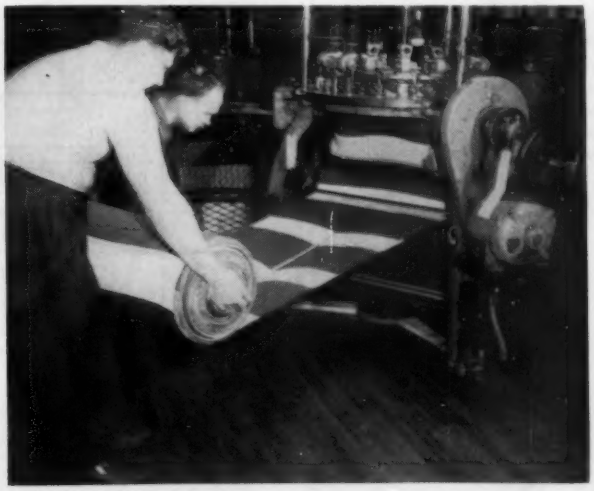


**3** SAMPLE FABRIC, made from the 16 cones, is taped to window and examined for yarn faults and shade.



**4** DYE LOTS of 1,000 lbs. are then processed if the sample is satisfactory. Each carrier holds 500 lbs. of yarn.

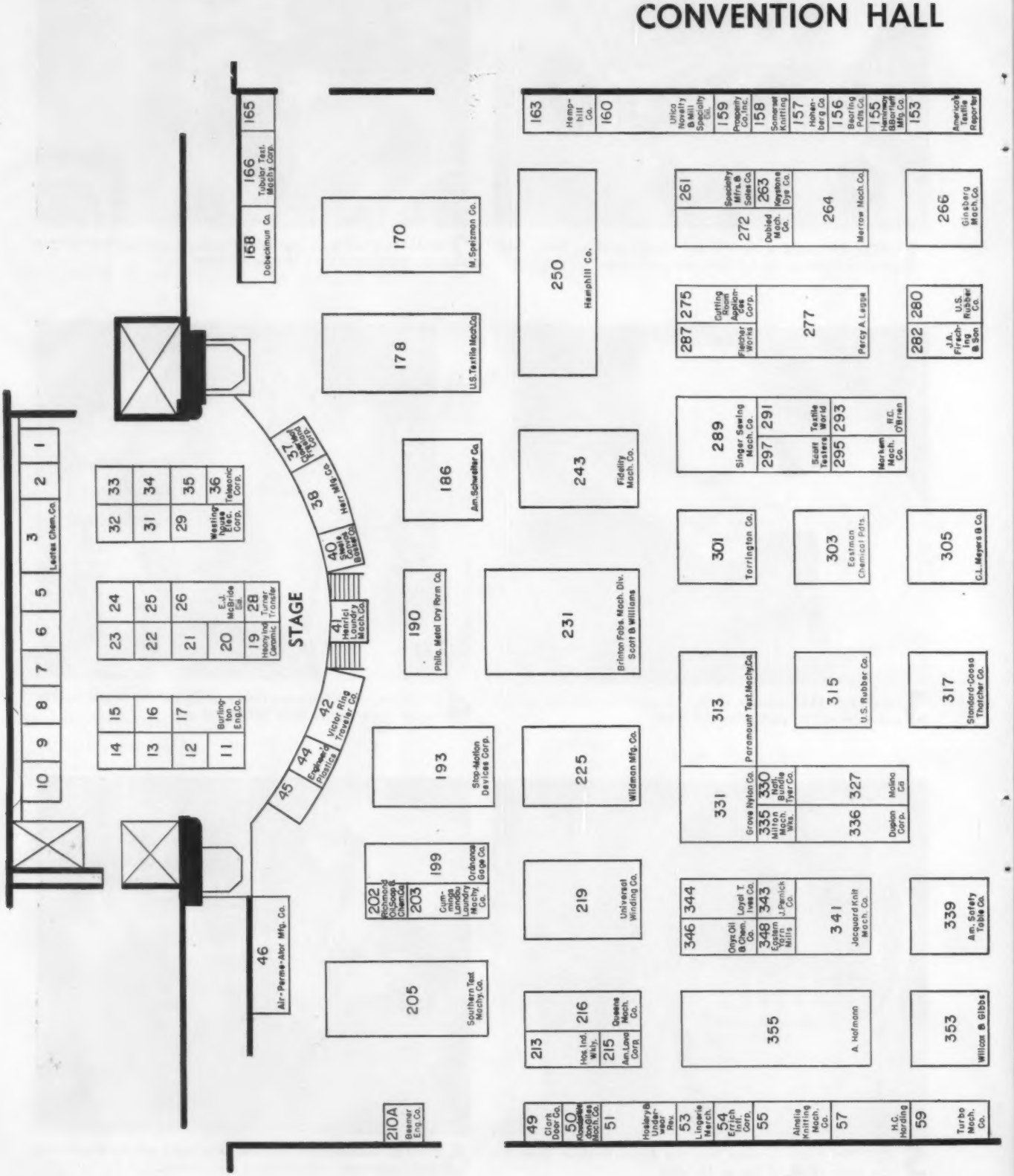
**5** COTTON YARN is raised from the dyeing machine. Each dye tube holds 20 oz. of 16s or 18s yarn.



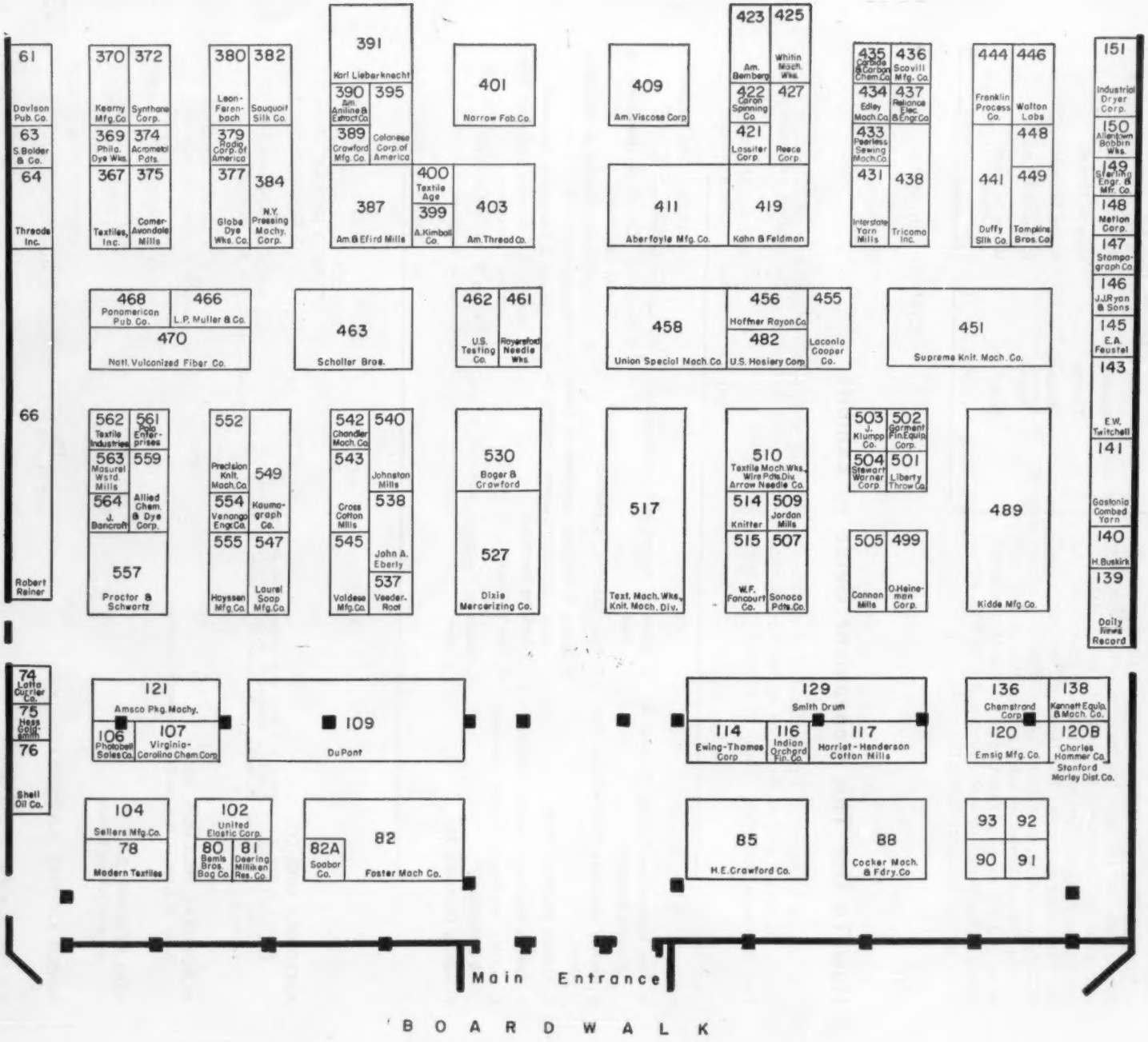
**6** STRIPED FABRICS are checked twice each roll for length. All yarns used in the striped fabrics are vat dyed.

# Knitting Arts Exhibition

## Atlantic City, N.J., April 25–29


CONVENTION HALL
STAGE
1 2 3 Lester Chem. Co. 5 6 7 8 9 10
11 Burling-ton Eng. Co. 12 13 14 15 16 17
19 Heavy Ind. Ceramic 20 E.J. McBride 21 22 23 24 25 26
28 Turner Trimble
29 31 32 33 34 35 36 Telesonic Corp. Westing-house Elec. Corp.
37 Specialty Fabrics
38 Hart Mfg. Co.
40 Sperle Knitting Machy.
41 Heinrici Laundry Mach. Co.
42 Victor Ring Traveler Co.
44 Engineered Plastics
45
46 Air-Parms-Alter Mfg. Co.
158 Dobeckmun Co. 165 166 Tabor Test. Machy. Corp.
170 M. Speizman Co.
178 U.S. Textile Mach. Co.
186 Am. Schaeffer Co.
190 Philo. Metal Dry Perm Co.
193 Stop-Motion Devices Corp.
199 Ordnance Bdge Co. Cum-mings Laundry Machy Co.
202 Richmond Oil Soap & Chem. Co.
203
205 Southern Test Machy Co.
210A Beamer Eng. Co.
213 Hos. Ind. Mchy.
215 Am. Lewa Corp.
216 Queens Mach. Co.
219 Universal Winding Co.
225 Wildman Mfg. Co.
231 Brinton Fabs. Mach. Div. Scott & Williams
243 Fidelity Mach. Co.
250 Hemphill Co.
301 Torrington Co.
303 Eastman Chemical Pdts.
305 C.L. Meyers & Co.
313 Paramount Test. Mach. Co.
315 U.S. Rubber Co.
317 Standard-Coosa Thatcher Co.
327 Molino Cal
330 Natl. Blank Tyer Co.
331 Grove Nylon Co.
335 Milton Mach. Wks.
336 Duplan Corp.
339 Am. Safety Table Co.
341 Jacquard Knit Mach. Co.
343 J. Pernick Co.
344 Loyal T. Hat Co.
346 Onyx Oil & Chem. Co.
348 Eastern Mills
353 Wilcox & Gibbs
355 A. Hofmann
49 Clark Door Co.
50 Klauder-Weldon Mach. Co.
51 Hosiery & Underwear Rev.
53 Lingerie Merch.
54 Erlich Corp.
55 Alnelia Knitting Mach. Co.
57 H.C. Harding
59 Turbo Mach. Co.
163 Hemphill Co. 160 Utica Novelty & Mill Specialty Co. 159 Prosperity Co. Inc. 158 Somerset Knitting 157 Hohenberg Co. 156 Bearing Pdts. Co. 155 Hamilton & Bartlett Mfg. Co. 153 American Textile Reporter
261 Specialty Mfrs. & Sales Co. 263 Keystone Dye Co. 272 Dubied Mach. Co. 264 Marrow Mach. Co. 266 Ginsberg Mach. Co.
287 275 Cutting Room Appliance Corp. Fletcher Works 277 Percy A. Legge 282 280 U.S. Rubber Co. J.A. Firech-ing & Son
289 Singer Sewing Mach. Co. 297 291 Textile World Scott Testers 295 293 Morrison Mach. Co. R.C. O'Brien

# EXHIBITION AREA



# 1955 Knitting Arts Exhibition

The 1955 Knitting Arts Exhibition that will be held in Atlantic City from April 25 through 29 is the forty-second in the series begun in 1905. This year's show marks the second time that the show has been under the triple sponsorship of the National Association of Hosiery Manufacturers, the National Knitted Outerwear Association, and the Underwear Institute. The theme of this year's show is "Continuous Modernization Insures Profits."

Over 200 companies are listed as exhibitors in this year's show, and it is expected that one of the largest crowds will attend. The sponsoring associations will hold their annual meetings and banquets during the week.

**SHOW HOURS**

| | |
|---|---|
| Monday ..... | Noon to 6 p.m. |
| Tuesday ..... | Noon to 10 p.m. |
| Wednesday ..... | 10 a.m. to 6 p.m. |
| Thursday ..... | 10 a.m. to 6 p.m. |
| Friday ..... | 10 a.m. to 1 p.m. |

## How To Use This Convenient Guide to Exhibits

If you are interested in a particular class of equipment, supply, or service, find in the following list the key letter that represents that class. Then, by running your finger down the corresponding column at the right of each page, you can identify quickly all the exhibits you want particularly to see.

A. Yarn Preparation—Twisting, Winding, & Warping Equipment

B. Knitting Machinery, Full-Fashioned Hosiery

C. Knitting Machinery, Warp

D. Knitting Machinery, Circular Hosiery

E. Knitting Machinery, Circular Outerwear & Underwear

F. Knitting Machinery, Flat

G. Specialty Knitting-Mill Accessories & Supplies

H. Dyes, Chemicals, & Finishes

J. Dyeing & Finishing Machinery & Equipment, Including Loopers, Seamers, & Boarding Equipment

K. Yarn & Thread

L. Packaging Equipment, Materials, & Supplies

M. Electrical Equipment

N. Regulating, Controlling, Measuring, & Testing Equipment

O. Air-Conditioning, Heating, & Ventilating Equipment

P. Lubricants & Lubricating Equipment

Q. Services, Miscellaneous Equipment, Associations, Publications

R. Cutting & Sewing Equipment

S. Dealers in Equipment & Supplies

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **ABERFOYLE MFG. CO.**<br>*Reps:* J. P. Holt, J. S. Kenrick, E. J. Neal, A. S. Wilson, H. M. Detwiler, Miss F. S. Lippincott, J. A. Holt, A. Huston, Jr., R. F. Morris, J. J. Neil, D. Gott, W. Crenshaw, W. Brown, T. S. Byrne, F. G. Miller, W. G. Vetterlein | 411 | K |
| **ACROMETAL PRODUCTS, INC.**<br>*Reps:* F. J. Bieber, H. Lane, T. R. Polglase, C. Steinback | 374 | G |
| **ADELAIDE MILLS**<br>See John J. Ryan & Sons | 146 | K |
| **AINSLIE KNITTING MACHINE CO.** | 55 | F |
| **AIR-PERME-ATOR MFG. CO.**<br>*Reps:* J. Kohut, Sr., E. Kohut, J. Kohut, Jr., R. G. Burr | 46 | A, O |

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **ALLENDALE CO.**<br>See Percy A. Legge | 277 | K |
| **ALLENTOWN BOBBIN WORKS, INC.**<br>*Reps:* H. W. Mack, H. S. Barnes | 150 | G |
| **ALLIED CHEMICAL & DYE CORP.**<br>*Reps:* G. H. Hotte, R. E. Ellsworth, S. A. Cooper, D. Holsenbeck, W. Poisson, G. Monk, N. Boghosian | 559 | K |
| **AMERICAN & EFIRD MILLS, INC.**<br>*Reps:* T. C. Smotherman, R. F. Jessen, W. H. Suttenfield, W. S. Montgomery | 387 | K |
| **AMERICAN ANILINE & EXTRACT CO., INC.**<br>*Reps:* W. J. Duddy, R. D. McCarty, L. Kippax, M. H. Silberman, J. H. Jones, W. A. Moran | 390 | H |
| **AMERICAN BEMBERG**<br>*Reps:* J. C. Fortune, R. I. DeVine, L. Nave, W. H. Six, J. C. Ashley, V. Bez, J. B. Dunlop | 423 | K |
| **AMERICAN DYESTUFF REPORTER** | 213 | Q |
| **AMERICAN LAVA CORP.**<br>*Reps:* J. B. Shacklett, J. S. Gosnell | 215 | G |
| **AMERICAN SAFETY TABLE CO., INC.**<br>*Reps:* D. Frankel, J. Frankel, B. Greenawalt, R. Pettit, H. King, J. Baumann | 339 | M R |
| **AMERICAN SCHWEITER CO.**<br>*Reps:* H. J. Theiler, H. Badertscher, H. S. Singer | 186 | A |
| **AMERICAN THREAD CO.**<br>*Reps:* C. E. Bowne, H. Horrocks, R. Hall, B. Lavery, W. P. McCulloch, N. Blackledge, J. Buscher, D. Bliss, J. Connorton, E. Pretty, E. Roller, F. Causey, H. Pennewell, H. Greeson, P. Breor, D. Howell, J. Christian, B. McBee | 403 | K |
| **AMERICAN VISCOSE CORP.**<br>*Reps:* J. C. Wilmerding, D. A. Davis, T. H. Andrews, H. C. Simpson | 409 | K |
| **AMERICA'S TEXTILE REPORTER** | 153 | Q |
| **AMSCO PACKAGING MACHINERY, INC.**<br>*Reps:* E. E. Mesmer, J. D. Sylvester, J. D. Keenan, Jr., G. G. Cignoli, S. Watson, E. Watson, G. Wiedersheim, J. Kelly, R. H. Freeman, F. Faletti | 121 | L |
| **ARGONNE WORSTED CO.**<br>See Percy A. Legge | 277 | K |
| **ARROW NEEDLE CO.** | 510 | G |
| **ATLANTIC RAYON CORP.**<br>See Malina Co. | 327 | K |
| **JOSEPH BANCROFT & SONS CO.**<br>*Reps:* L. W. Rainard, R. Hutchinson, L. Shattuck | 564 | K |
| **BEARING PRODUCTS CO.**<br>*Reps:* W. M. Golaski, H. E. Gosling, Jr. | 156 | C F |
| **BEEMER ENGINEERING CO.** | 210A | S |
| **BEMIS BROS. BAG CO.** | 80 | L |
| **BOGER & CRAWFORD**<br>*Reps:* Mrs. F. Boger, E. T. Boger, A. H. J. Boger, I. Wattis, W. Carothers, J. Carrasco, R. D. Seeback, M. R. Copeland, A. B. Rice, H. Segal | 530 | K |
| **S. BOLDER & CO., INC.**<br>*Reps:* S. Rotman, A. Bolder | 63 | R |

## Guide to Exhibitors

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **BRANT YARNS, INC.**<br>See John J. Ryan & Sons | 146 | K |
| **BURLINGTON ENGINEERING CO., INC.**<br>*Reps:* J. S. Williamson, W. J. Newcomb, D. L. Lomax | 17 | J |
| **HERBERT BUSKIRK**<br>*Reps:* H. Buskirk, W. F. Voight, Jr. | 140 | Q |
| **CANNON MILLS, INC.**<br>*Reps:* H. E. Aken, J. C. Williams, C. V. Albright, J. C. Bartlett, H. Crumbliss, F. A. Dusch, Jr., J. J. Meyer, J. F. Russell, J. W. Turner, W. F. Denning, T. R. Smith, D. A. Long, Jr., H. Curlee, R. C. Rapp, W. C. Cannon, F. E. Byrne | 505 | K |
| **CARBIDE & CARBON CHEMICALS CO., A DIV. OF UNION CARBIDE & CARBON CORP.**<br>*Reps:* R. S. Brissette, R. K. Kennedy, J. S. McGilly, A. L. Snyder, C. A. Strodl | 435 | K |
| **CARON SPINNING CO.**<br>*Reps:* B. Stocking, B. Zintak, D. Caron, E. Breyman, J. B. Cameron, S. Cameron, F. Durr, J. Caron | 422 | K |
| **CELANESE CORP. OF AMERICA**<br>*Reps:* G. Hein, R. Marx, H. MacCauley | 395 | K |
| **CHAMPLAIN SPINNERS, INC.**<br>See Oscar Heineman Corp. | 499 | K |
| **CHANDLER MACHINE CO.**<br>*Reps:* F. Rosenberg, R. Shields | 542 | G R |
| **CHEMSPUN YARNS LTD.**<br>See Eastern Yarn Mills | 348 | K |
| **CHEMSTRAND CORP.**<br>*Reps:* R. E. Smith, M. H. Morse, E. J. Hansen, J. F. Smart, W. C. Melton, F. J. Murray, W. P. Tukey, T. F. Maher, J. A. Lopez, G. E. Osborne, M. R. Dalton, J. Chamberlain, H. Cramer, M. Simmons, E. R. Rencher, Jr., T. E. Toole, R. H. Hale, E. R. Truell, C. C. Madeira, J. B. Harlow, G. R. Tait, F. Wright, Jr. | 136 | K |
| **CLARK DOOR CO., INC.**<br>*Reps:* H. B. Clark, H. B. Clark, Jr., J. H. Harris, Jr. | 49 | Q |
| **CLOVERLEAF-FREELAND CORP.**<br>*Reps:* T. Coxe, R. F. Makepeace, W. H. Miller | 37 | G |
| **COCKER MACHINE & FOUNDRY CO.**<br>*Reps:* J. Cocker, III, J. C. Bodanaky, H. W. Groce, F. H. Cunningham, Jr., P. E. Sherrill | 88 | A G |
| **COMER-AVONDALE MILLS, INC.**<br>*Reps:* L. B. Allen, G. W. Bailey, J. Ballow, P. R. Branton, J. E. Bush, G. Clark, C. Crowther, R. O. Elliott, R. E. Fulton, S. E. Fulton, W. Hardegree, I. C. Schumacher, J. F. Sharp, B. C. Weber, W. R. Austin | 375 | K |
| **COTTON YARNS CO.**<br>See Gastonia Combed Yarn Corp. | 141 | K |
| **H. E. CRAWFORD CO., INC.**<br>*Reps:* H. E. Crawford, H. E. Crawford, Jr., W. Stinnette, A. K. Woods | 85 | D G |
| **CRAWFORD MFG. CO., INC.**<br>*Reps:* A. Crawford, F. Doerr, M. Antonevich, G. Onderdonk | 389 | G |
| **CROSS COTTON MILLS CO.**<br>*Reps:* E. Cross, Jr., O. R. Cross, I. I. Davis | 543 | K |
| **CUMMINGS-LANDAU LAUNDRY MACHINERY CO., INC.**<br>*Reps:* E. Cummings, D. Green | 203 | J |
| **CUTTING ROOM APPLIANCES CORP.**<br>*Reps:* D. Grossberg, B. Gottschalk, H. Bard, J. E. Fox, S. L. Hirsch, H. Liebman, G. Roth, S. Hutkin | 275 | G R |

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **DAILY NEWS RECORD** | 139 | Q |
| **DAVISON PUBLISHING CO.** | 61 | Q |
| **DEERING, MILLIKEN RESEARCH CORP.**<br>*Reps:* R. B. Newton, N. C. Armitage, E. D. Bolinger, E. H. Pittman, H. Repokis, J. W. Whitworth | 81 | K |
| **DIXIE MERCERIZING CO.**<br>*Reps:* J. B. Frierson, C. R. Ewing, A. K. Johnson, P. D. Morrow, D. O. Blevins, E. R. Kimball, W. D. Evans, W. C. Henderson, J. B. Cameron, A. Cameron, III, W. A. Eipper, Jr., F. W. Frank, G. W. Veness, G. M. Porges, W. W. Logan, M. H. Horchler, P. H. Dalglish, T. J. Tighe | 527 | K |
| **DOBECKMUN CO.**<br>*Reps:* A. Gould, P. Nathanson, L. Wang, M. E. Shank, B. Droney, G. Todd | 168 | K |
| **DUBIED MACHINERY CO.**<br>*Reps:* J. G. Sandri, R. Singer, E. Hafner, J. Gutknecht | 272 | E, F |
| **DUFFY SILK CO.**<br>*Reps:* C. G. Duffy, Jr., P. Hemmerich, Sr., P. H. Hemmerich, Jr., C. W. Seidel, F. Overkamp, C. A. Lorenz, Jr., W. W. Seidel, H. G. Kenna, Jr. | 441 | K |
| **DUPLAN CORP.**<br>*Reps:* G. Friedlander, G. Fenton, E. Ellis, F. Collins, W. Wood, Jr., C. Donahue, R. H. Griffith, R. J. Mebane, F. McKay, W. Wheeler, J. Huling, F. S. Potter, J. A. Martini | 336 | K |
| **E. I. DU PONT DE NEMOURS & CO., INC.** | 109 | K |
| **EASTERN YARNS MILLS, INC.**<br>*Reps:* M. Leopold, R. Dalton, R. Virgil, M. Bier | 348 | K |
| **EASTHAMPTON RUBBER THREAD CO.**<br>See United Elastic Corp. | 102 | K |
| **EASTMAN CHEMICAL PRODUCTS, INC.**<br>*Reps:* F. J. Ruddock, W. T. Cummins, P. Coan, J. Carvin, R. W. Greene, R. Cook, R. W. Leswing, H. Waters, J. Heape, J. R. Sherril, C. P. Bertland | 303 | K |
| **JOHN A. EBERLY, INC.** | 538 | S |
| **EDLEY MACHINE CO.** | 434 | G |
| **EMERSON APPARATUS CO.**<br>See Scott Testers, Inc. | 297 | N |
| **EMSIG MFG. CO.** | 120 | R |
| **ENGINEERED PLASTICS, INC.**<br>*Reps:* D. M. Davidson, C. H. Phillips, J. H. Windle, Jr. | 44 | G |
| **ERRICH INTERNATIONAL CORP.** | 54 | L |
| **EWING-THOMAS CORP.**<br>*Reps:* J. L. Rankin, J. W. Jester, G. W. Fiss, D. Thomas, J. F. Meschter, G. E. White, F. W. Crews | 114 | K |
| **W. F. FANCOURT CO.**<br>*Reps:* W. F. Fancourt, J. L. Fancourt, C. G. Wolff, T. Lindley, R. P. Rhodes, J. W. Young | 515 | H |
| **ERNEST A. FEUSTEL, INC.**<br>*Reps:* E. A. Feustel, F. C. Feustel, H. W. Fricke | 145 | G |
| **FIDELITY MACHINE CO., INC.**<br>*Reps:* L. Katz, R. D. Faigenbaum, G. Petrie, P. Mahler, P. Haas | 243 | D |
| **FIRESTONE INDUSTRIAL PRODUCTS CO.**<br>See Percy A. Legge | 277 | K |
| **J. A. FIRSCHING & SON, INC.**<br>*Reps:* B. Firsching, A. Kern | 282 | |
| **FLETCHER WORKS, INC.**<br>*Reps:* C. W. Moore, T. B. Baldridge, Jr., J. D. Harrison | 287 | A, J |

## Guide to Exhibitors

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **FOSTER MACHINE CO.**<br>*Reps:* W. C. Chisholm, E. C. Connor, H. W. Ball, C. B. Terry, H. E. Swift, J. B. Davenport, E. P. Dodge, G. W. Mallory, H. A. Cadle, F. F. Stange, E. R. Davis, C. P. Bullard, R. B. Kendall | 82 | A |
| **FRANKLIN PROCESS CO.**<br>*Reps:* W. F. Wolfe, C. W. Dawson, B. S. Phetteplace, R. F. Strahley, M. E. Davis, I. W. Gardner, J. R. Garner, H. O. Fry, R. B. Lusignea, C. E. McElwee, S. W. Cable, A. G. Dana, W. H. Hall | 444 | K |
| **GARMENT FINISHING EQUIPMENT CORP.**<br>*Reps:* F. Renick, R. S. Dickie, Jr. | 502 | J |
| **GASTONIA COMBED YARN CORP.**<br>*Reps:* C. A. Ross, R. J. Gurney, H. A. James, E. L. Strauss, A. Kushner, M. Reibel, N. Langer | 141 | K |
| **GINSBERG MACHINE CO., INC.**<br>*Reps:* W. R. Liebeman, S. Margolis, H. Stout, Mrs. Schorpp, C. Jordan | 266 | G J L |
| **GLOBE DYE WORKS**<br>*Reps:* H. T. Greenwood, T. S. Greenwood, W. Greenwood, W. Goodis, W. A. Hilbert, W. B. Taylor, F. V. Traut | 377 | K |
| **GROVE NYLON CO.**<br>*Reps:* W. L. Schautz, A. G. Schautz, W. T. Cheatham, H. C. James, W. C. Napier, Jr., D. M. Harshman, R. W. Yeabsley, R. F. Yeabsley, Dr. R. F. Stuewer, J. Kalinowski | 331 | K |
| **CHARLES HAMMER CO.** | 120B | |
| **H. C. HARDING, INC.**<br>*Reps:* G. J. Reihl, M. M. Wolf | 57 | G P |
| **HARRIET-HENDERSON COTTON MILLS**<br>*Reps:* A. G. Sewell, D. F. Swain, D. O. Blevins, W. Brown, P. H. Dalgliah, M. Y. Cooper, J. L. McInnis, T. H. Crudup, Jr. | 117 | K |
| **HAYSSEN MFG. CO.**<br>*Reps:* R. P. Wilson, J. O. Willis, F. Koehn, H. White, J. C. Johnston, W. A. Hayssen | 555 | L |
| **HEANY INDUSTRIAL CERAMIC CORP.**<br>*Reps:* A. O. Pieper, H. Boveri, R. Carroll | 19 | G |
| **OSCAR HEINEMAN CORP.**<br>*Reps:* D. G. Brewster, J. C. LaVey, R. E. Nelson, C. Brereton, D. W. Gott, S. D. Lochhead, F. Lunday, L. C. Graef, R. W. Parkin, J. Smolin, G. O. Belanger, M. B. Robbins | 499 | K |
| **HEMINWAY & BARTLETT MFG. CO.**<br>*Reps:* E. Vogel, H. T. Spray | 155 | K |
| **HEMPHILL CO.**<br>*Reps:* B. R. Eberaman, R. M. Sachar, E. St. Pierre, Miss E. M. Brown, T. T. Toole, R. Lamontagne, P. Howard, R. Greene, A. Alred, J. P. Canavan, W. Ehlert, M. Ward, I. Green, P. L. St. Pierre, A. Bouthillette, N. D. Langlois, K. W. Smith, J. Wawzonek, F. Sullivan, E. Frageolle | 163, 250 | D |
| **HENRICI LAUNDRY MACHINERY CO.** | 41 | J |
| **HERR MFG. CO., INC.**<br>*Reps:* H. B. Atwood, W. W. Woodard, R. M. Leach, E. B. Ahlers, J. McLean | 38 | A |
| **HESS, GOLDSMITH & CO., INC., ATWATER DIV.**<br>*Reps:* E. J. Schellenberg, E. J. Schellenberg, Jr., R. P. Schellenberg | 75 | K |
| **HOFFNER RAYON CO.**<br>*Reps:* J. C. Hoffner, J. M. Hoffner, J. C. English, J. G. Hoffner, C. P. Hoffner | 456 | K |
| **ALFRED HOFMANN & CO.**<br>*Reps:* C. A. Hepp, P. Schoenster, K. Mayer, A. A. Brenner, M. Ebert, F. Hanna, H. Nittmann, R. Eppler, H. L. Wirth, A. Bachman, G. Graves, C. Paulus, E. Mayer, C. Foehl, W. Sorhagen | 355 | C G |
| **ALFRED HOFMANN NEEDLE WORKS, INC.**<br>See Alfred Hofmann & Co. | 355 | E G |

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **HOHENBERG CO., INC.**<br>*Reps:* O. Hohenberg, Sr., B. L. Hohenberg, M. Feinstein | 157 | K |
| **HOSIERY & UNDERWEAR REVIEW** | 51 | Q |
| **HOSIERY INDUSTRY WEEKLY** | 213 | Q |
| **INDIAN ORCHARD FINISHING CO.**<br>*Reps:* L. Wess, C. Brennan | 116 | Q |
| **INDUSTRIAL DRYER CORP.**<br>*Reps:* J. R. Tutt, P. H. Friend, R. G. Leininger, F. W. Caesar | 151 | A |
| **INTERSTATE YARN MILLS** | 432 | K |
| **LOYAL T. IVES CO., INC.**<br>*Reps:* T. Whitlock, Sr., T. Whitlock, Jr., C. Lydecker, R. Bergen | 344 | G |
| **JACQUARD KNITTING MACHINE CO., INC.**<br>*Reps:* J. Tittl, R. Dott, F. Beeton, C. Miller | 341 | E |
| **JOHNSTON MILLS CO.**<br>*Reps:* D. R. Johnston, D. R. Jonas, F. N. Belk, R. M. Bechtel, W. J. Crummer, J. W. Ferguson, E. E. Jones, Jr., W. B. Phelps, Jr., W. J. Yates | 540 | K |
| **JORDAN MILLS, INC.**<br>*Rep:* R. C. Jordan, Jr. | 509 | K |
| **KAHN & FELDMAN, INC.**<br>*Reps:* G. N. Frank, A. Cameron, J. B. Cameron, W. A. Eipper, Jr., P. H. Dalglish, H. Kurtz, C. R. Ibach, Jr., D. F. Swain, P. Wilson, D. O. Blevins | 419 | K |
| **KAUMAGRAPH CO.**<br>*Reps:* F. T. Marston, B. P. Lindley, A. W. Lindholm, A. W. Mickel, H. A. York, J. L. Reeves, A. J. Geiringer, D. V. Woods, W. C. Marden, W. P. Raiford, V. G. Stanton | 549 | L R |
| **KEARNY MFG. CO., INC.**<br>*Reps:* C. F. Dulken, Sr., E. W. Ercklentz, P. J. Sturzenegger, S. H. Johnson | 370 | A N |
| **KENNETT EQUIPMENT & MACHINERY CO.**<br>*Reps:* R. Woods, C. H. McKaig, M. C. Seldomridge, J. H. Adams | 138 | G J |
| **KEYSTONE DYEING CO.**<br>*Reps:* F. P. Murphy, H. Kline | 263 | Q |
| **KIDDE MFG. CO., INC.**<br>*Reps:* W. J. Behr, Jr., H. J. Ruddick, H. J. Noe, J. H. Fleming, R. Giordano, K. Kaak, C. E. Glover, R. Peel, W. Melford, O. Biegel | 489 | A C F |
| **A. KIMBALL CO.**<br>*Reps:* H. T. Odom, D. Ferber, J. Kremer, F. Brady, J. P. McGuire | 399 | L |
| **KLAUDER WELDON GILES MACHINE CO.** | 50 | J |
| **JOSEPH KLUMPP CO.**<br>*Reps:* J. J. Klumpp, G. L. Vonder Lindt, H. W. Steele, W. Gill, Jr., R. D. Miller, R. S. Hayes, W. J. Kane, J. M. McGinnes, C. H. W. Mandeville, Jr. | 503 | K |
| **THE KNITTER** | 514 | Q |
| **LACONIA COOPER CO., INC.**<br>*Reps:* G. A. Parsons, C. E. Gamper, C. O. Hodges, B. Lauderbach, G. L. Dawson, K. R. Lingley | 455 | G |
| **LASSITER CORP.**<br>*Reps:* J. H. Lassiter, L. W. Weller, J. V. Shea, H. C. Wall, W. B. Wine, R. W. Plover, M. R. Smilow, J. C. Tiddy | 421 | L |
| **LATTA, CURRIER CO., INC.**<br>*Reps:* A. W. Latta, Jr., A. M. Currier, W. L. Huggins, III, W. F. Durkin, L. E. Rudisill, D. S. LaFar, J. C. Moore | 74 | K |
| **LAUREL SOAP MFG. CO., INC.**<br>*Reps:* C. E. Bertolet, W. H. Bertolet, Jr., A. H. Gaede, F. Jackson, W. H. Bertolet, III, T. C. Holst, B. N. Peterson, J. P. McGinty | 547 | H |

## Guide to Exhibitor

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **LEATEX CHEMICAL CO.**<br>*Reps:* C. L. Hammell, L. K. McChesney, M. M. Guertin, W. Brink, H. Buckley, J. A. Clark, T. F. Robbins, J. McChesney, Jr., H. Higginbotham, S. J. Guertin, J. F. Rieder, J. McChesney, Sr. | 3 | H |
| **PERCY A. LEGGE**<br>*Reps:* C. B. Rockwell, I. Littlefield, Jr., M. Dursin, E. Dursin, L. Dursin, R. J. Mitchell, F. Armitage, H. Stawniak, T. J. Gracia, M. Durain, H. T. Whitin, C. E. Adams, Jr., C. W. Neeld, Jr., W. Smith, R. Rosenfeld, R. Condon, T. W. Adams, W. H. Brewer, L. Wagoner | 277 | K |
| **LEON-FERENBACH, INC.**<br>*Reps:* C. Ferenbach, T. B. Craver, A. N. Tingley, W. W. Patten, C. W. Wolcott, R. W. Boyd, R. S. Ferenbach | 380 | K |
| **LIBERTY THROWING CO., INC.** | 501 | K |
| **KARL LIEBERKNECHT, INC.**<br>*Reps:* A. Friedmann, C. A. Friedmann, G. B. Groh, L. Engle, D. Miller, M. Radvanyi, J. Renger, R. Thierfelder, C. Bilder, S. Hoffman, Steinberg Bros. | 391 | B C F |
| **LINGERIE MERCHANDISING** | 53 | Q |
| **EDWARD J. McBRIDE** | 26 | A |
| **MALINA CO.**<br>*Reps:* L. Malina, H. F. C. Wilcox, F. Diamond, F. Malina, A. Malina, T. L. Power, R. Lyons, H. Greene, J. K. Malbin, E. Krueger, E. D. Kay, J. J. Richrath, R. Westland, E. Tabor, J. Gutcheon, H. Calder, N. Vaiman, B. Appelle, S. H. Eisenberg | 327 | K |
| **MARKEM MACHINE CO.**<br>*Reps:* R. C. Mensel, C. H. Cheeseman, H. Clark, G. Fretz, J. S. Remmel | 295 | L |
| **MARVEL SPECIALTY CO.**<br>See Southern Textile Machinery Co. | 205 | G J |
| **MASUREL WORSTED MILLS, INC.** | 563 | K |
| **MERROW MACHINE CO.**<br>*Reps:* J. M. Washburn, W. M. Baker, H. F. Stolzenberg, J. Washburn | 264 | R |
| **METLON CORP.**<br>*Reps:* A. Brucks, E. W. Dunham, Jr. | 148 | K |
| **CLARENCE L. MEYERS & CO.**<br>*Reps:* C. L. Meyers, M. M. Meyers, J. A. Meyers, G. E. Meyers, E. N. Myers, C. E. Bender, D. J. Strauss, E. W. Fowler, L. Eschelbach, H. W. Schrader, F. W. Johnston, E. Windle | 305 | K |
| **MILLER WRAPPING & SEALING MACHINE CO.**<br>See Amsco Packaging Machinery, Inc. | 121 | L |
| **MILTON MACHINE WORKS, INC.**<br>*Reps:* J. S. Billig, C. J. Anchor, W. D. Leinbach, G. W. Blunt | 335 | A G |
| **MODERN TEXTILES MAGAZINE** | 78 | Q |
| **L. P. MULLER & CO.**<br>*Reps:* H. D. Muller, H. G. Harper, J. M. Matlack, J. T. Hawthorne, F. H. Ward, T. H. Nicholson, H. R. Penington, E. O. Penington, T. C. Brown, A. B. Reid, W. J. Scott, W. C. Muller, H. R. Peck, T. Dove, R. A. Eldridge | 466 | K |
| **NARROW FABRIC CO.**<br>*Reps:* S. R. Fry, J. W. Sweeney, R. G. Manderbach, O. E. Huber, T. M. Fry, G. Dudley, Jr., F. S. Pierce, S. M. Shirey | 401 | K |
| **NATIONAL ASSN. OF HOSIERY MANUFACTURERS** | Stage | Q |
| **NATIONAL BUNDLE TYER CO.** | 330 | G |
| **NATIONAL KNITTED OUTERWEAR ASSN.** | Stage | Q |
| **NATIONAL VULCANIZED FIBRE CO.**<br>*Reps:* R. S. Fisher, R. A. Craig, C. E. Lathrop, C. C. Hannum, R. D. Tolbert, L. D. Phelps, E. B. Burnley, C. J. Fahey, J. J. Norris, R G. Henderson, J. C. Berger, G. H. Ingram | 470 | G Q |
| **NEW YORK PRESSING MACHINERY CORP.**<br>*Reps:* H. E. Cole, M. Puretz, S. Berl, M. Lacha, L. Chase | 384 | J R |

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **RICHARD C. O'BRIEN YARNS**<br>*Reps:* R. C. O'Brien, A. J. Moher, C. J. McAlaine, E. L. Merritt, Jr., A. K. Moher, G. A. Richardson, J. Powers, E. Robinson, W. C. Schmidt, B. Collingwood | 293 | K |
| **ONYX OIL & CHEMICAL CO.**<br>*Reps:* L. P. Brick, A. R. Jenny, A. C. MacKey, R. A. Watson, J. W. Huber, R. Raas, S. J. Singer, Jr., E. Yzewyn, H. Keller | 346 | H |
| **ORDNANCE GAUGE CO.**<br>*Reps:* R. E. Zeruneith, J. S. Abramski, M. M. Rothkopf, P. G. Belaief | 199 | E |
| **PANAMERICAN PUBLISHING CO., INC.** | 468 | Q |
| **PARAMOUNT TEXTILE MACHINERY CO.**<br>*Reps:* W. P. Pope, J. C. Fenley, W. H. Albertson, L. J. Albertson, O. A. Siegel, L. D. Ross, W. E. Pike, H. Richter, H. Campbell, G. E. Dunn, G. Heuer, M. Gustafson | 313 | J |
| **PEERLESS SEWING MACHINE CO., INC.** | 433 | |
| **JOSEPH PERNICK CO., INC.**<br>*Reps:* L. Pernick, D. Pernick, D. Haft | 343 | J |
| **PHILADELPHIA DYE WORKS**<br>*Reps:* L. H. Mason, M. M. Anderson, J. A. Knipe, T. O'Donnell, J. B. Egee | 369 | K |
| **PHILADELPHIA METAL DRYING FORM CO., INC.**<br>*Reps:* J. Seligman, T. A. Temple | 190 | J |
| **PHOTOBELL SALES CORP.**<br>*Reps:* D. L. Slater, M. A. Bramson | 106 | C |
| **POLA ENTERPRISES, INC.**<br>*Reps:* A. Palumbo, J. W. Grodin | 561 | R |
| **PRECISION KNITTING MACHINE CO., DIV. OF CENTRAL CITY MACHINE & TOOL CO.**<br>*Reps:* W. R. Skinner, J. W. Bullard, H. E. Newton, S. Simek, R. H. Carhart, D. A. Way, G. E. MacPherson, A. Booton | 552 | E |
| **PROCTOR & SCHWARTZ, INC.**<br>*Reps:* W. H. Poole, C. S. Tiers, W. J. Merrigan, D. D. Cunningham, P. L. Schaffer, F. Redman, T. Craig, N. Worthington | 557 | J |
| **PROSPERITY CO., INC.**<br>*Reps:* G. Salinett, F. E. Toth, W. Kane | 159 | J |
| **QUEENS MACHINE CO.**<br>*Reps:* R. F. Lanthier, J. Miskovsky, C. Hetu, R. M. Zimic | 216 | C F G |
| **RADIO CORP. OF AMERICA, ENGINEERING PRODUCTS DIV.**<br>*Reps:* R. M. Colvin, E. J. Guilfoy, H. B. Merrill, J. C. Parker, G. B. Russell, R. A. Teare, A. R. Walthers | 379 | Q |
| **REECE CORP.**<br>*Reps:* J. H. Pikul, O. F. Christiansen, J. L. Cruden, H. M. Rainone, J. Hunger, F. O. Paul | 427 | R |
| **ROBERT REINER, INC.**<br>*Reps:* F. Lambach, K. T. Marx, J. Koegler, W. Horn | 66 | A C F J |
| **RELIANCE ELECTRIC & ENGINEERING CO.**<br>*Reps:* K. S. Lord, E. H. Sowers, K. G. Miller, C. V. Gregory | 437 | M |
| **RICHMOND OIL, SOAP & CHEMICAL CO., INC.**<br>*Reps:* W. Alkus, M. W. Levi, H. M. Rubin, J. E. Gallman, J. W. Lederer | 202 | H |
| **ROCHAMBEAU WORSTED CO.**<br>See Percy A. Legge | 277 | K |
| **ROYAL COTTON MILL CO.**<br>See Sellers Mfg. Co. | 104 | K |
| **ROYERSFORD NEEDLE WORKS, INC.**<br>*Reps:* R. W. Breidenbach, F. O. Heller, C. Bortz | 461 | G |
| **JOHN J. RYAN & SONS, INC.** | 146 | K |

## Guide to Exhibitors

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **SAUQUOIT SILK CO., INC.**<br>*Reps:* C. L. Havey, E. C. West, P. E. Walder, Jr., T. R. Stretton, M. H. Smith, E. P. Schwarze, W. H. Hutchinson, W. H. Hurd, J. L. Radics | 382 | K |
| **SCHOLLER BROS., INC.**<br>*Reps:* E. S. Atkinson, L. M. Boyd, W. A. Daniel, E. J. Fitzgerald, Jr., C. W. Jones, J. F. Noble, D. E. Robertson, J. O. Sweitzer, C. H. Schepmoes, C. H. Schuettler, W. R. Sargent, W. S. Truette | 463 | H |
| **SCOTT & WILLIAMS, INC.**<br>*Reps:* B. J. Faucette, W. O. McMillan, H. G. Kellett, W. E. Chaput, J. G. Schmidt, F. H. Hallenbeck, A. W. Nealley, J. S. Hubbard, J. R. Seymour, R. W. Bennett, F. W. Smith, P. P. Chaput | 231 | D |
| **SCOTT & WILLIAMS, INC., BRINTON FABRICS MACHINE DIV.**<br>*Reps:* W. D. Ide, G. McDowell, D. Brinton, J. Olachea, F. Wakefield, J. Woodburn, D. MacIntyre, K. King, F. Summerlin, R. Forrest, R. Shannon, C. Folsom, D. Grothey, L. Wilkie, M. Felker, J. Kolnik | 231 | E |
| **SCOTT TESTERS, INC.**<br>*Reps:* J. E. Hargreaves, J. Klinck, H. W. Horton, C. J. Emerson, E. G. Emerson | 297 | N |
| **SCOVILL MFG. CO.**<br>*Reps:* P. H. Dunn, E. F. Dillon, J. R. McAteer, W. R. Pothier, P. M. Coholan, R. W. Hall, K. W. French | 436 | G |
| **SELLERS MFG. CO.**<br>*Reps:* B. E. Jordan, B. E. Jordan, Jr., F. Longcrier, J. M. Neel | 104 | K |
| **SHELL OIL CO.**<br>*Reps:* E. Colerick, R. Lokinda, W. Landis, K. Nonweiler, W. Niedermeyer, B. Davis, L. Cattling, R. Skord, J. Gilmore, T. Klement | 76 | P |
| **SIMPLEX PACKAGING MACHINERY, INC.**<br>See Amsco Packaging Machinery, Inc. | 121 | L |
| **SINGER SEWING MACHINE CO.**<br>*Reps:* P. R. Mohney, H. McDowell, C. Kone, H. Wedemeyer, A. Shenusky, Miss M. Murray, Miss E. Bobonis, R. Gerstl, E. L. Ching, J. E. Wertz | 289 | R |
| **SMITH, DRUM & CO.**<br>*Reps:* H. S. Drum, R. N. Smith, J. P. G. Patton, W. C. Dodson, A. P. March, A. Bagian, R. W. Foltz, W. A. Fuchswanz, J. M. Ballentine, P. M. Parrott, S. Huffstetler | 129 | J |
| **SOABAR CO.** | 82A | H |
| **SOMERSET KNITTING, INC.** | 158 | G |
| **SONOCO PRODUCTS CO.**<br>*Reps:* W. H. Miller, A. H. Gildersleeve, J. K. Taylor, G. K. Lewis, L. H. Stokes, W. B. Broadbent, P. F. Williams, J. D. Watford, W. K. Lewis, Jr., W. R. Peacock, W. M. Carpenter, M. B. Griffin, B. H. Biggs, J. W. Hillsgrove, H. P. Lamarche, H. Campbell, E. J. Cotter, C. A. Burnham, W. R. Gray, O. D. Duckett, O. F. Fayne, L. C. Wall, A. L. Carter, J. A. Reagan | 507 | G |
| **SOUTHERN TEXTILE MACHINERY CO.**<br>*Reps:* T. A. Paxton, T. H. DeSpain, R. N. Parkin, A. George, W. H. Hale, G. Harralson, L. T. Ballard, M. Brown, C. G. Newton, J. Haines, Jr., J. Haines, III, G. R. Haines, G. T. Smith | 205 | G J |
| **SPECIALTY MFRS. & SALES CO.**<br>*Reps:* J. E. Kienel, J. W. Glaze, Jr., E. E. Abernathy, Jr., F. L. Rufty | 261 | J |
| **MORRIS SPEIZMAN CO., INC.**<br>*Reps:* M. Speizman, T. Valenstein, A. C. Gregg, A. McCance, J. H. Barnes, M. P. DeLeo | 170 | D J |
| **STAMPAGRAPH CO., INC.** | 147 | L |
| **STANDARD-COOSA-THATCHER CO.**<br>*Reps:* F. R. Harris, R. C. Thatcher, Jr., E. S. Davis, W. S. Lawson, J. P. Rickman, J. O. Foil, M. Lyon, W. M. Hall, E. R. Dillmore, J. H. Clarke, R. G. Miller, J. M. Smith, D. Cunningham, J. Patrick | 317 | K |
| **STANFORD MARLEY DISTRIBUTING CO., INC.** | 120B | J |

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **STEELE CANVAS BASKET CO., INC.**<br>*Reps:* A. E. Pratley, G. L. Whynaught | 40 | G |
| **STERLING ENGINEERING & MFG. CO.**<br>*Rep:* G. McGee | 149 | G |
| **STEWART-WARNER CORP., ALEMITE DIV.**<br>*Reps:* J. Z. Esbenshade, M. Smith | 504 | P |
| **STOP-MOTION DEVICES CORP.**<br>*Reps:* N. J. Tellerman, F. Weston, E. Vossen, G. F. Connors, V. G. Chaplin | 193 | G |
| **STRETCH-TEX CO., INC.**<br>See John J. Ryan & Sons, Inc. | 146 | K |
| **SUPREME KNITTING MACHINE CO., INC.**<br>*Reps:* S. Mishcon, L. Mishcon, S. Mishcon, H. Aguinek, I. Golden, H. A. Strasburg, B. Narker, A. Mulluck, D. Dupuis, J. Teitelbaum, J. Radin | 451 | E |
| **SYNFOAM YARNS, INC.**<br>See Malina Co. | 327 | K |
| **SYNTHANE CORP.**<br>*Reps:* E. E. Smith, H. Widdop, C. B. Moss, J. K. Johnson, R. B. Galloway, D. Garrison, O. L. Smith, M. B. Firehock | 372 | G |
| **SYNTHETIC YARNS, INC.**<br>See Malina Co. | 327 | K |
| **TELESONIC CORP.** | 36 | L |
| **TEMPLON SPINNING MILLS, INC.**<br>See Eastern Yarn Mills | 348 | K |
| **TEXTILE AGE** | 400 | Q |
| **TEXTILE INDUSTRIES** | 562 | Q |
| **TEXTILE MACHINE WORKS, KNITTING MACHINE DIV., WIRE PRODUCTS DIV.**<br>*Reps:* R. C. Wetzel, L. R. Thun, R. N. Apprich, N. E. Richards, E. W. Kaul, E. P. Master, R. J. Ryan, L. C. Scheffey, Jr., F. B. Hower, R. W. Weaver, E. A. Shoemaker, H. G. Fiedler, H. P. Good, L. P. Garrigan, W. Dufft, H. Wendling | 517, 510 | B F G J |
| **TEXTILE WORLD**<br>*Reps:* E. D. Fowle, D. H. White, P. M. Thomas, J. H. Blore, R. B. Pressley, T. B. Winston, R. W. Pinault, W. G. Ashmore, M. London, J. C. White, Jr., R. L. Chisholm, H. C. Harvey | 291 | Q |
| **TEXTILES, INC.** | 367 | K |
| **THREADS, INC.**<br>*Reps:* J. Gottleib, J. Land, H. Fesit, G. LeValley, A. Aronson, I. Simerman, V. Catalano, J. Payson | 64 | K |
| **TOMPKINS BROS. CO.**<br>*Reps:* W. A. Ingalls, E. Maurer | 449 | E |
| **TORRINGTON CO.**<br>*Reps:* T. H. Mueller, W. W. Bielock, B. T. Virtue, E. F. Didier, A. Klinkoski, W. H. Smith, F. Stefanov, W. R. Reid, Jr., C. H. Rowe, L. W. Losee, D. J. Reid, H. M. Deming, L. R. Whitcomb, A. V. Maurer, F. A. Howard, C. R. Johnson, W. B. Meeteer, H. D. Blake, H. S. Gordon, C. Epps, G. T. Stanley, C. T. Spalding, W. Myers, Jr., R. L. Brace, J. J. McCaffrey, D. A. Burghoff, W. C. Wiechardt, J. W. Beaber, H. E. Gosling, P. S. Warner, W. Patz, F. G. Stubbs, G. B. Walls | 301 | G |
| **TRICOMA, INC.**<br>*Reps:* C. E. Weinberg, W. W. Glocer | 438 | |
| **TUBULAR TEXTILE MACHINERY CORP.**<br>*Reps:* E. Cohn, J. Cohn, D. Foreman, J. Sasson, L. Rothenberg, Jr., D. Ross, E. Goodman, F. Catallo, H. Hixon, S. Snyder | 166 | J |
| **TURBO MACHINE CO.**<br>*Reps:* E. J. Berger, B. C. Hall, W. K. Wyatt, J. R. Brownell, W. N. DeTurk, F. Huguenin, W. Bergey, W. McCluen, P. Wenhold, G. W. Dudley, Jr., F. W. Warrington | 59 | J |

## Guide to Exhibitors

| EXHIBITOR | BOOTH NO. | PRODUCT CLASSIFICATION |
|---|---|---|
| **TURNER TRANSFER, INC.**<br>*Rep:* G. M. Turner | 28 | Q |
| **E. W. TWITCHELL, INC.**<br>*Reps:* J. B. Holland, J. P. Wark, B. J. Vetrone, R. H. Therrell, M. Shuldenrein, H. Gullberg, D. Weingard, G. Edelman | 143 | L |
| **UNDERWEAR INSTITUTE** | Stage | Q |
| **UNION SPECIAL MACHINE CO.**<br>*Reps:* T. S. Whitsel, C. L. Rosenquist, A. J. Feigel, H. R. Kaiser, L. M. Brown, B. W. Merz, J. R. Haderly, L. D. Cassell, R. L. Smith, W. J. Price, R. S. Vogt, R. B. Foster, C. R. Batchelor, W. G. Booth, E. S. Rockney, W. E. Palm, M. F. Groover | 458 | J, R |
| **UNITED ELASTIC CORP.**<br>*Reps:* R. A. Waite, W. E. Dalby, D. Cameron, G. B. Weidhaas, E. R. Boehm, F. L. Dorr, J. DeBold | 102 | K |
| **U. S. HOSIERY CORP., MACHINERY DIV.**<br>*Reps:* J. N. Bogoff, H. Chell, J. MacEachern | 482 | D |
| **U. S. RUBBER CO., LASTEX YARN & RUBBER THREAD DIV.**<br>*Reps:* M. E. Bliss, H. B. Cobb, W. J. Connelly, W. F. Giddings, P. Linke, T. E. Parks, C. M. Patterson, P. J. Regan, P. L. Westphal | 315 | K |
| **U. S. RUBBER CO., TEXTILE DIV.**<br>*Reps:* H. E. Anderson, W. H. Bric, S. K. George, R. S. Gibson, J. R. Higgins, R. W. Jennette, R. J. Keane, W. I. McCarty, J. W. Reid, J. H. Shaw, B. W. Wiesen, V. C. McQuiddy, J. B. Jackson | 280 | K |
| **U. S. TESTING CO.**<br>*Reps:* H. M. Block, F. P. Brennan, A. J. Kellner, E. J. Donohoe, R. J. Keltz | 462 | Q |
| **U. S. TEXTILE MACHINE CO.**<br>*Reps:* J. B. Kingsley, P. J. Thomas, A. W. Thomas, Jr., S. E. Stahller, N. F. Gubitose, F. C. Nave, R. Williams, V. A. Schiffer | 178 | A |
| **UNIVERSAL WINDING CO.**<br>*Reps:* R. Leeson, W. S. Warren, H. H. Richardson, T. L. Cotter, W. L. Paulhamous, F. P. Barrie, F. J. Barrows, J. R. Breen, K. H. Gibson, H. D. Kernan, E. C. Parish, C. E. Sullivan, L. E. Efrench, J. B. Brun | 219 | A |
| **UTICA NOVELTY & MILL SPECIALTY CO.**<br>*Reps:* J. A. Firsching, Jr., J. A. Firsching, III, D. Firsching | 160 | J, R |
| **VALDESE MFG. CO.** | 545 | K |
| **VEEDER-ROOT, INC.**<br>*Reps:* G. L. Logan, T. Nelson, W. T. Heydt, D. Addison, R. W. Moller, W. B. Brooks, R. E. Walker | 537 | N |
| **VENANGO ENGINEERING CO.**<br>*Reps:* W. Stegers, O. H. McCandless, A. Pickup | 554 | J |
| **VICTOR RING TRAVELER CO.**<br>*Reps:* E. R. Jerome, B. H. Waterman, E. L. Connor, E. Cranshaw | 42 | G |
| **VIRGINIA-CAROLINA CHEMICAL CORP.**<br>*Reps:* M. Clark, J. H. Karrh, L. Billings, W. Backus, R. H. Stinnette | 107 | K |
| **WALTON LABORATORIES, INC.**<br>*Reps:* W. Feldermann, J. B. Feldermann, J. R. Lewis, H. Puttbach | 446 | O |
| **WESTINGHOUSE ELECTRIC CORP.** | 29 | M |
| **WHITIN MACHINE WORKS**<br>*Reps:* H. Moss, R. F. Waters, C. May, G. F. McRoberts | 425 | C, F |
| **PAUL WHITIN MFG. CO.**<br>See Percy A. Legge | 277 | K |
| **WILDMAN MFG. CO.**<br>*Reps:* K. Howie, F. E. Paul, J. J. Brennan, J. Hill, L. Bickel, L. Brooke, F. B. Wildman | 225 | B, E |
| **WILLCOX & GIBBS SEWING MACHINE CO.**<br>*Reps:* N. Wonnacott, A. M. Miller, A. E. Selby, L. E. Connolly, E. F. LeFevre, E. C. Ferguson, C. H. Haviland, Jr., G. B. Tobey, F. I. Perkins, J. Fiola, H. Russell | 353 | R |

PREBLEND is made on the single 60x60-in. cylinder to get a better distribution of low-percentage blend components; all components are brought up to at least 10%. The mix is supplied in bales from the picker room. White wool and soft wool waste is being run here.

# Bachmann Uxbridge Precards WOOL-BLEND Components

**▶ At this mill, low-percentage blend components are premixed to get a better distribution. A standard 60x60-in. cylinder delivers into a vacuum take-up pan.**

By **THOMAS B. WINSTON,** Assistant Editor, TEXTILE WORLD

WOOL-BLEND COMPONENTS are precarded at Bachmann Uxbridge Worsted Corp., Uxbridge, Mass., on a 60x60-in. Davis & Furber card cylinder. The purpose of precarding is to get a better blend with low-percentage components in the mix, and any stock component under 10% is brought up to a premixed 10%. For example, instead of 5% of white stock with a high percentage of black soft waste, 10% of gray from the precarder is used.

To date, the mill hasn't run anything that couldn't be handled on the precarder; all types of synthetics, fur, mohair, alpaca, cashmeres, picked sweater stock, and all kinds of wool have been run. Production varies between 90 and 120 lbs. per hr., depending on the stock; but the precarder is not continuously in use.

A feature of the installation is that no tender is required. The doffer comb strips into a vacuum take-up pan, and the stock is sucked into a storage room and baled as required. A man from the picker room keeps check on the hopper feeder. The fancy is covered with a hood that exhausts into the vacuum system.

The cylinder is clothed with a coarse kneeless clothing, Tufferbrute No. 1, and no stripping has been required. The clothing is expected to run a year before grinding.

On typical production, such as a blend of white wool and soft waste, a 26 gauge is used, with a cylinder speed of 100 rpm., fancy speed of 700 rpm., worker speed of 8 to 10 rpm., and a doffer speed of around 12 rpm.

A print of this illustration in black and white suitable for line reproduction for use in your advertising, available free on request.

**A FACT:** The market for full-fashioned stockings may be expected to increase to 70,307,000 women by 1967, an increase of 26 per cent over 1953. (Textile Machine Works, 1953 Statistical Survey.)

In the hosiery industry, the one unyielding force is obsolescence. Compare the production of your least efficient machinery with a "Reading 100" Full-Fashioned Knitting Machine—in courses per minute, dozens per hour, salability of fabric. The "Reading 100" is not only a fast multiple-section machine, but it is also a reliable one . . . speed without interruption. And with every Reading Machine you get the benefit of Textile Machine Works' engineering help, service and technical experience. Let us present the "Reading 100" story in your office, at your convenience. [illegible] today.

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*Full Fashioned Knitting Machine*

30 Sections

51, 60, 66, Gauge

FILAMENT-RAYON and spun-rayon filling are run on units side by side on Whitin-Schweiter winders. Edna Penny checks the tension on the filament end, which is roughly twice that on spun-rayon ends.

CLOTH-ROOM REPORT shows this loom is making second-quality cloth, and Weaver Maxine Love stops and flags the loom. The cloth is spun rayon; the loom is an XD with center-fork stop motion.

# Waverly Mills Converts From COTTON to RAYON

**▶Waverly Mills, for years a yarn mill, started its first weaving operation just four years ago. Cotton and staple-rayon fabrics were woven at first, but now all fabrics are staple and filament rayon.**

**By RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

Waverly Mills, Inc., Laurinburg, N. C., is an old-line manufacturer of coarse carded cotton yarns, but four years ago it branched out into fine carded and combed cotton yarns and yarns made from several synthetic fibers.

Then, without previous weaving experience, Waverly started weaving fine cotton and spun-rayon cloths. A number of fabrics have been made, but weaving production has been mainly on spun-rayon and cotton print dress goods and drapery materials and cotton corduroy. Now, all weaving production is on spun-rayon dress fabrics.

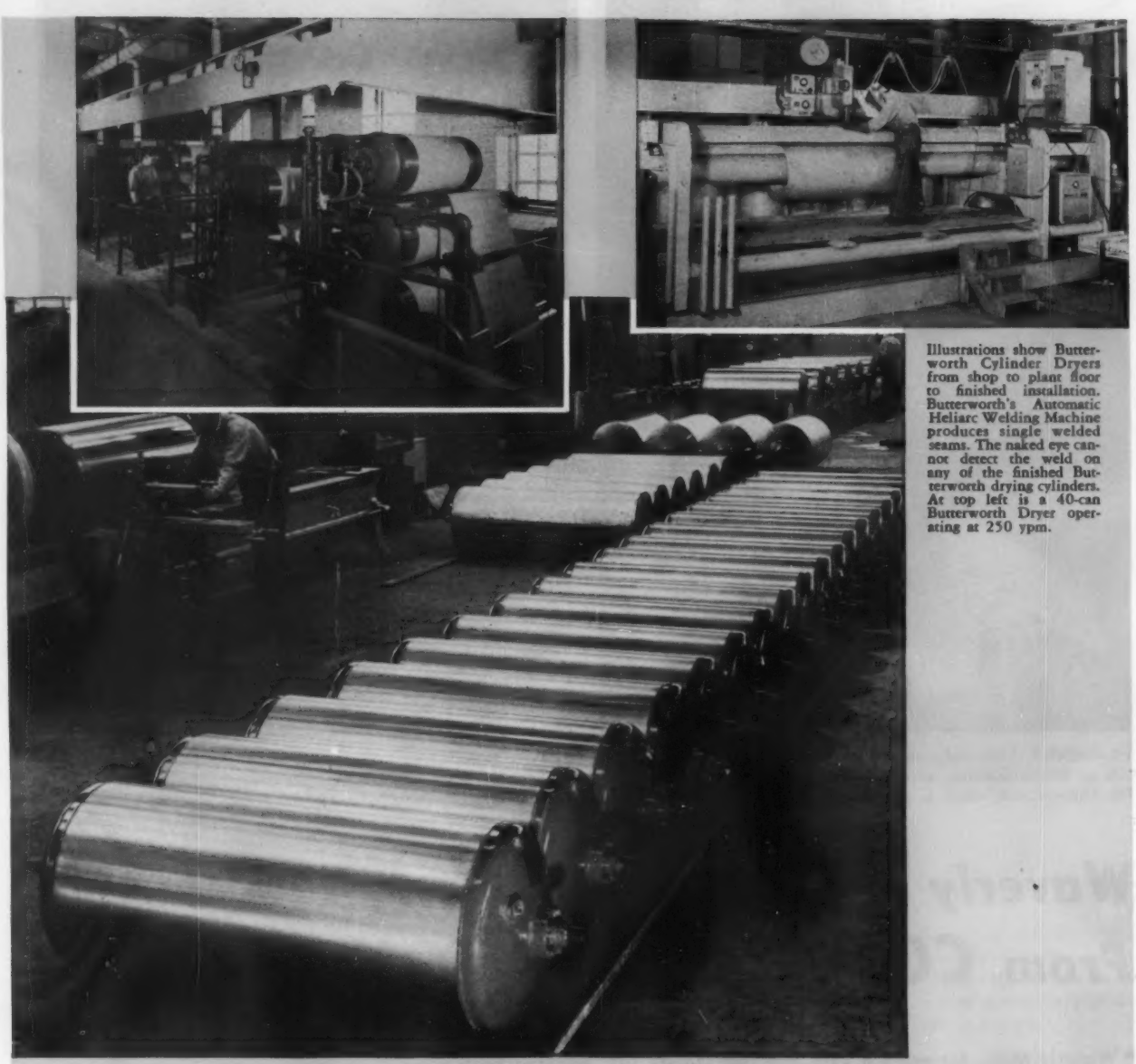
Warp and filling yarns range from 14s to 34s. Some 50-den. filament-rayon filling is also used. Five main styles of cloth are woven at present, but 13 other constructions are woven on only a few looms.

Considering that Waverly had to start almost from scratch training employees for the new weaving mill, it's doing a pretty good job. For example, production, quality, machine speeds, and job layouts are comparable to many more-experienced weaving mills.

As soon as all looms are converted to spun-rayon fabrics, Superintendent J. L. Brannan expects the normal weave-room efficiency to be 94% and the second-quality cloth to run 2%.

### Here's the Weave-Room Setup

The weave room is equipped with 240 XD dobby looms. The loom width is 50 ins. on 144 looms and 54 ins. on the remaining 96 looms. The loom speed is 164 ppm. on both widths of looms. Loomfixers have 60 looms each, and a standard set of looms is 48 per weaver. Three battery-hands fill batteries on the 240 looms, and the jobs are arranged according to filling numbers.



Illustrations show Butterworth Cylinder Dryers from shop to plant floor to finished installation. Butterworth's Automatic Heliarc Welding Machine produces single welded seams. The naked eye cannot detect the weld on any of the finished Butterworth drying cylinders. At top left is a 40-can Butterworth Dryer operating at 250 ypm.

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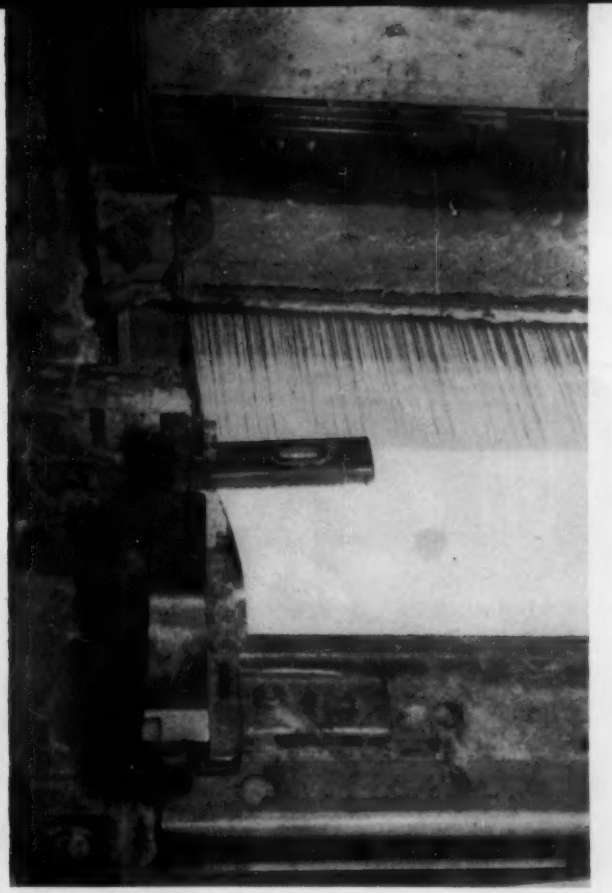
# BUTTERWORTH

OVERHEAD WIRING (550 v.) is easy to keep clean. Since the motor control is located above the warp, little lint gets on the housing and fires have been eliminated. Loom mounts support the conduits.



SPUN-RAYON-FABRIC loom settings vary from cotton-cloth settings. On this weave with a heavy beat-back, the cloth is threaded inside the breastbeam to reduce the beat-back. The filling is filament rayon.

A general overseer of weaving has charge of weaving, yarn preparation, and the cloth room. There's a weave-room second hand on each shift. The second- and third-shift second hands supervise yarn preparation.

Yarn-preparation machinery is: a Barber-Colman warper, running at 900 yds. per min.; a Johnson seven-cylinder rayon slasher running at 148 yds. per min.; and two Whitin-Schweiter automatic filling-bobbin winders with 66 units each.

The weave room and warp- and filling-preparation room are both located in the basement of one of Waverly's yarn mills.

Loom beams are handled with electric hoists on mono-rails.

The building is conditioned with a washed-air system and auxiliary atomizers. The weave-room relative humidity is held at 78%, and the temperature is kept at 80° F. the nine coolest months of the year.

## Machine Layout Is Efficient

The layout of machinery is simple and efficient. The weave room runs most of the length of the building, with the cloth room partitioned off at one end. A lengthwise wall separates the weave room from the yarn-preparation room. Yarn is brought down on cheeses from the spoolers on the floor above.

The warper is located at one end of the yarn-preparation room. Section beams are taken from the warper directly to the adjoining slasher creel, and slashed warps are doffed about even with the center section of the weave room.

Filling winders are next to the slasher, and the supply of wound filling from them is also near the weave room. Empty bobbins are removed from the weave room and cleaned on a bobbin-cleaning machine at the end of the filling winders. Woven cloth is removed through the weave-room door to the cloth room.

No extensive movement of yarn in any process or of the woven cloth is necessary. General Superintendent James B. Griffin says the machinery layout is about perfect.

Warps are retied, when the same styles go back, with two Barber-Colman motorized tying-in machines. All looms have conventional Draper drives, run 8¾-in. bobbins, and have 26-in. beam heads and Bartlett let-offs.

## Nine Loom-Setting Changes

In changing from cotton fabrics to rayon fabrics, several loom-setting changes are made. Weave-room Overseer McClellan gives these principal ones:

1. Remove the drag-roll equipment and set the whip-roll cam to vibrate the whiproll when the lay is at front center.
2. Remove as much power as possible from the picker sticks.
3. Level the harnesses on print cloths at front center.
4. Level the harnesses on gabardines, twills, and other multiharness materials 1¼ ins. before the fell of the cloth.
5. Adjust the warp stop motion so that the drop wires walk ¼ to ½ in. The amount of walking depends on the weight of the construction and the amount of lint shed.
6. On plain weaves or fine work, have a level warp line from the whiproll to the breastbeam.
7. Use padded shuttle eyes on all yarns above 14s. On coarser yarns, use regular cotton-type shuttle eyes.
8. Place fur in the shuttle the full length of the shuttle.
9. Use rayon-type temples and temple rolls.

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# How To Reduce
# SPINNING ENDS DOWN

**End breakage in spinning is costly in poor quality, high waste, and increased handling resulting from bobbins not full enough. To keep ends down under control, the spinning overseer must see that a variety of small causes are checked constantly.**

**Here is a guide for that use—**

**By JOHN E. ALLEN**

A SPINNING FRAME is not stopped for end breakage until breakage is excessive; but any end breakage increases the cost of winding: there is less yarn on the bobbins and the winder tenders have to handle more bobbins. Furthermore, high end breakage affects quality because of the piecings; and waste increases because of excessive stick waste. Add to this the dissatisfied feeling of the employees, and you have a poor situation.

To assist in reducing end breakage, the following breakdown shows the type of end break and how it can be reduced.

### Unclassified

Unclassified breaks are sometimes the result of previous processes. To reduce them, the overseer of carding should be asked to check tensions to see if they are too tight; stretched places will break. Bottom rolls in both carding and spinning should not run eccentric. Too much reworkable waste mixed in with a regular mix will also create end breakage.

### Travelers off and Worn

Change travelers more often; worn rings should be replaced. If the traveler circle is too small, it will break off easily; so run tests to see which traveler circle gives the best results. Thread guides must be properly set; if they are off center, the traveler will run with a wobbly motion, which causes uneven wear and travelers to come off before they should.

### Lint on Travelers

Lint can be overcome by setting traveler cleaners to just clear the traveler as it revolves. Replace missing traveler cleaners.

### Bands and Tapes off

Inspection and replacement of worn bands and tapes will reduce this type of break. It is important to set idler pulleys properly; if not set properly, they are liable to let the tape slip off, especially when the frame is started. If the tape is running on only part of the pulley, it will wear in the center and break.

### Slack Bands

Slack bands can be kept to a minimum if doffers pull off the band when they find a softly built bobbin. Check bands to see that they are being tied correctly. Also, bands should be kept in the room they are used in.

### Defective Spindles

End breakage from this cause can be reduced by setting the spindles more often; at this time, badly worn spindles should be replaced. Bolsters should be checked and worn ones replaced. Check the spindle steps. Spindle oiling and the condition of the oil should also be observed at the time of the setting.

### Ends Down at Doffing

Good supervision can help to reduce ends down at doffing. Supervisors must observe the work of the doffers; if doffers are leaving the frames before piecing up all the ends, they should be told about it. If the doffers have many ends down, a little more care in doffing will help.

### Separators out of Line

Section men must be on the lookout for separators out of line. When separators are too low or too high, the ends whip together and break; and if they are loose, there is excessive whipping against the blade and end breakage.

### Ring-Rail Vibration

End breakage from ring-rail vibration occasionally happens, but it can be overcome by replacing worn lifter rods and bushing. Make sure that cylinders are not running eccentric because of bent and worn shafts. Also, check for worn or loose bearings and driving pulleys running eccentric because of worn bushings.

### Thread Guides off Center

Thread guides should be checked when the spindles are being set. If thread guides are off center, they increase end breakage just as much as do off-center spindles. Fixers should always be on the lookout for bent or loose guides.

### Bad Bobbins

Doffers should set aside bobbins that are rough, broken, or cracked or do not fit the spindle properly.

### Top-Clearer Waste

Top clearers are not being picked often enough. Closer supervision is necessary to see that a picking schedule is followed.

### Steel-Roll Lap

To prevent this end breakage, bottom steel rolls with burrs should be smoothed off with pumice stone. Rolls must be scoured often enough to prevent seed from packing in the flutes; this seed will sometimes lick up the stock as it is drafted. Care should be used in oiling roll necks; if too much oil is used, it runs along the flutes and has a tendency to make the cotton stick to the rolls.

CONTINUED ON PAGE 155

# THE VALVE THAT REVOLUTIONIZED AIR CYLINDER OPERATION

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***Third*** - the small sealed solenoids act on only 8 volts of current. There is no danger of solenoid burnout (in fact the control units are guaranteed against burnout). Wiring requirements in interlocked circuits are simple. There is no electrical hazard to either operator or machine.

***Fourth*** - the Electroaire Valve is compact. No bigger than a package of king-size cigarettes, it fits into crowded quarters, or on moving machines.

**And finally** — the Electroaire Valve is durable. Over a quarter of a million are in everyday use. Records of 30,000,000, 40,000,000 even 50,000,000 cycles without repairs of any kind are common.

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### Roving Broken Back

Check for blunt skewers. Skewers should be free from waste on the bottom, and all should run in the steps. Other causes of broken back roving: eccentric-running rolls in the card room, too little twist in the roving, and stretched roving caused by overtight tensions.

### Waste Between Stirrups and Rolls

Stirrups must be centered between the rolls to prevent waste collecting between the stirrup and roll. If they are not centered, the waste will pack on the closer space, which will move into the path of the drafted roving and cause the end to break.

### Bunches in Roving

To reduce this kind of break, more care must be taken in the card room. Roving-frame tenders must be checked by the card-room supervisor to see that the clearers are picked often enough to keep waste from going into the roving. Roving-frame tenders should not fan off their frames to clean them; flyers should be cleaned at the doff; and when overhead cleaning is done, all frames should be stopped and lint picked off the stock after the cleaning has been done.

### Roving Run-Outs

Run-outs can be prevented if the spinners will observe the bobbins in the creel more closely. They should make sure there is enough roving on the bobbin to last until they make their next cycle; if spinners take too long a rest period, the roving will run out before they get around to it.

### Singlings

Roving-frame tenders know when they make singlings; and when they are found in the spinning creels, they should be taken out and shown to the card-room overseer. Then he can trace the singling to the person who made it. Keep records of the number of bad rovings sent back. The weight of the traveler must be heavy enough so that a single will break when it comes along.

### Hard Ends

To reduce hard ends, the card-room supervisor must check the piecings being made by the roving-frame tenders to make sure they are not twisting too hard or wetting their fingers to make a piecing. Spinners should not twist the roving too hard in creeling in a new bobbin.

### Bad Top Rolls

Breaks caused by bad top rolls can be reduced through a regular, systematic roll-changing schedule. On one complete frame at a time, rolls that are grooved, fluted, hollowed, and with worn cots should be replaced. Good rolls that are left can be used in the back line on other frames. Inspect the roving traverse motions to see that they are not dwelling too long at the end of the stroke; with too much dwell, rolls become grooved. If the stroke is too short, rolls soon become hollowed. To prevent fluted rolls, top rolls must not have the same exact diameter as the bottom roll.

### Top-Roll Laps

To overcome breaks from top-roll laps, rolls must be kept in good condition as described above.

### Dry Top Rolls

Sometimes a roll will dwell for a fraction of a second—just long enough to make the end break. This condition is usually caused by the roll being dry. To overcome it, the supervisor should observe the oiling routine to see that it is being done often enough.

### Lint in Trumpets

Occasionally, breaks are caused by lint in trumpets. To reduce these breaks, the roving traverse must be kept clean. The back of top clearers should be picked often enough to prevent waste hanging beyond the clearer. Roving trumpets should be set to prevent waste collecting between the trumpet and the back roll.

### Broken by Operator

If operators are in a hurry, they sometimes break an end in taking out the bottom clearer. A little more care would help to reduce these breaks.

### Broken in Cleaning

Cleaning breaks usually happen when spinners are cleaning the roll beam or thread guides. The waste they use picks up other waste; and as they pass the wad between the ends, some of it twists onto the yarn and breaks it. If loose waste is not taken off the brush when thread guides are cleaned, the end will break if it gets twisted in.

### Flying Lint

To reduce these breaks, frames ready to be blown off should be stopped; also, stop the frames on each side of the one that is being cleaned. Pick loose lint off the ends before starting up. Sweepers should not be allowed to fan under frames or spinners to fan the creels. Frames should be stopped when overhead parts are being cleaned, and any lint that has fallen on the frames must be picked off before starting up.

### Creeling

Sometimes spinners create end breakage by making thick or hard piecings in creeling. These piecings do not draft properly and sometimes break the end. Here again, supervisors must be on their toes to observe the piecing methods used by the spinners.

## Humanics — A TW Brief

## The Reason Why

**One of the easiest ways to destroy morale is to have a "self-nonexplanatory" line of communication—which exists when the man doing a job doesn't know what he is supposed to accomplish. You can't expect a worker to have high morale when he has no idea how his work affects the endpoint in the operation. It takes only a second to explain his importance to the over-all job. Always give as many reasons why as possible. With a reason why, the worker will attack a problem with a completely different attitude.**

**Company- or department-sponsored activities provide you an opportunity for a friendly talk with the worker and his family. This opportunity can be turned into a definite morale-building activity.**

**Richard S. Grant**
**Owens-Corning Fiberglas Corp.**
**(From talk given at Plant Maintenance and Engineering Show)**

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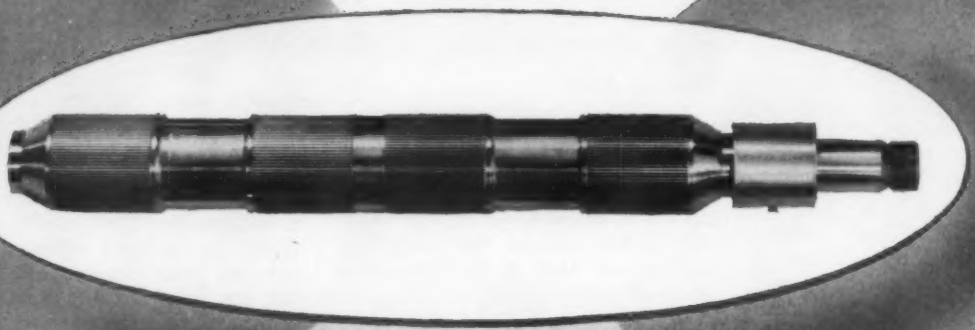

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## POINTERS for SUPERVISORS

# Is the Supervisor Always Wrong?

**▶ To many supervisors, the advice they get about running their departments sometimes sounds like nagging and not-very-constructive criticism.**

**▶ If you've ever had the feeling that the experts are second-guessing you without understanding your problems, you'll be helped by this fresh approach to the question of a supervisor's responsibilities.**

By **JAMES E. GARDNER,** Assistant Director, Personnel Research and Training, Fieldcrest Mills, Inc.

A FOREMAN CANNOT easily escape the impression, as he reads pages of advice to supervisors, that he's wrong a good part of the time. There is pressure on him to keep things right or do things right in his own department, and this he does in his own way. Yet when his actions and decisions are viewed through the critical eyes of the experts —including experts in his own organization—they often appear wrongheaded, misdirected, or incomplete.

The trouble is that his way cannot coincide with their way. He is dealing directly with what Prof. Roethlesberger of Harvard has called "the brute and stubborn phenomena of human relations," and this harsh fact necessarily affects his actions. He can't take a grandstand seat. And he is dealing with specific problems: he can't indulge in generalized answers or theoretic prattle.

Who is right and who is wrong? A completely satisfactory answer is not to be found. Yet supervisors who feel they are always in the wrong (or right, as the case may be) may benefit from a discussion of some of the reasons for the varying views of supervisor conduct. It may console them and at the same time suggest to them how they may work more effectively with their own staff people.

### What Is Success?

First of all, there are differing definitions of success and failure. The engineer who estimated a labor saving of $50,000 per year from a machine-installation project may consider the project a failure (with the foreman in the wrong) if the saving was only $40,000. The foreman, on the other hand, may think the project was a success even though he retained a few more employees, at least temporarily, than contemplated in the project. He may feel justified in trading off a little of the expected monetary gain in order to minimize the disturbing effect of the change on his work force. Whatever the equation, his workers must be part of it; he has to live with them.

Second, the right answer or action by the foremen is not an absolute answer, a one-and-only answer. It is not a matter of arithmetic. This fact is not so apparent to those who deal primarily with numbers. The accountant, perhaps, sees high supply costs as a figure that compares unfavorably with the budgeted figure. The weave-room supervisor sees a stubborn old fixer discarding useful loom parts in spite of repeated warnings. He may see several such workers and congratulate himself on keeping supply costs as low as they are. The accountant is not likely to share in the congratulations; he doesn't know the fixers.

The foreman may have to settle for only part of his objective. He may have to try various methods to get his fixers to conserve supplies. There is no 100% right way. There are various ways, and none can be completely effective.

There is sometimes a disturbing tendency even among personnel men, whose training and experience should have taught them differently, to assume that they know the "best" solution to a particular problem faced by a supervisor.

### Complex Problems Have No Simple Answers

The third point is really an explanation of the second. One of the main reasons a person thinks he has an absolute answer is that he doesn't know the whole problem. Most supervisory problems are complex. They may have accounting aspects and engineering aspects and personnel aspects, but a solution to one aspect of a problem is not a complete solution. Since staff men deal with restricted aspects—in their own specialties—they can cite a solution to an aspect. But that solution is only a partial solution, and it may have to be modified when it is combined with other partial solutions.

The only man who can get a full and intimate view of the whole problem is the foreman, and he must apply and modify the answers—his own and those of his advisors—so as to face up to the whole problem as he views it. His view may be somewhat wrong, but he's the only one in a position to have it. To the extent that his answers vary from the partial solutions of his advisors—to that extent his advisors may think him wrong. But he may still be right.

The failure to see the whole problem is not an exclusive fault of staff men. Line executives may fail in this regard, too. Their failure is somewhat different, however. They may be informed concerning the various aspects of a problem but may not have enough first-hand knowledge of each aspect. As a rule, the farther up the line a report goes, the more meat it loses. An executive, basing his opinion

CONTINUED ON PAGE 226

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## where hundreds of hungry bearings make ordinary lubrication costly...

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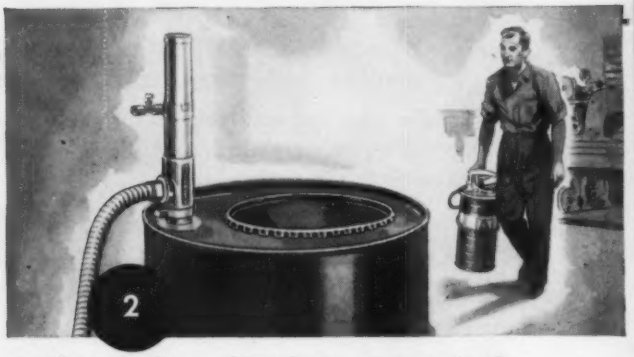
An important saving in *man-hours*, in that 63% figure. But nothing compared to the savings in *machine-hours*. Time *isn't* spent in down-time for lubrication—time *isn't* wasted making costly repairs due to bearing failure. And the reason for these savings is that only "refinery-clean" lubricant reaches bearings—machines operate at the peak longer—costs go *down!*

There's a combination of Alemite transfer pump and bucket pumps just right for your plant, large or small. Transfer Pumps fit either 100 or 400 lb. drums, all types of lubricants. Bucket Pumps are available to service any machine—handle any lubricant from lightest oils to heaviest viscous greases. Delivering pressures up to 15,000 psi to fit your needs. All of them are completely sealed, preventing contamination, reducing fire hazards.

A 400-pound barrel of lubricant arrives at the plant—sealed, fresh, "refinery clean."




An Alemite Air Operated Transfer Pump is inserted in the bung-hole. It is threaded to fit—completely reseals the barrel.

In less than a minute a 25-pound bucket pump is filled—no contamination—no air pockets—no mess or waste!

Now the bucket pump is ready to service hundreds of hungry bearings with lubricant that is protected all the way from barrel-to-bearing!

**With Alemite Plan "B"**
**Only Refinery Clean Lubricant Reaches Machines**

This combination of Alemite transfer pumps and bucket pumps is known as Alemite Plan "B." It is one of the five plans that your trained Alemite representative can show you. Ask him for your free copy of the new Alemite booklet: "5 Plans for Better Plant Lubrication"—or use the coupon at the right. It will show you how to save money in your plant.

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# EQUIPMENT and SUPPLY NEWS

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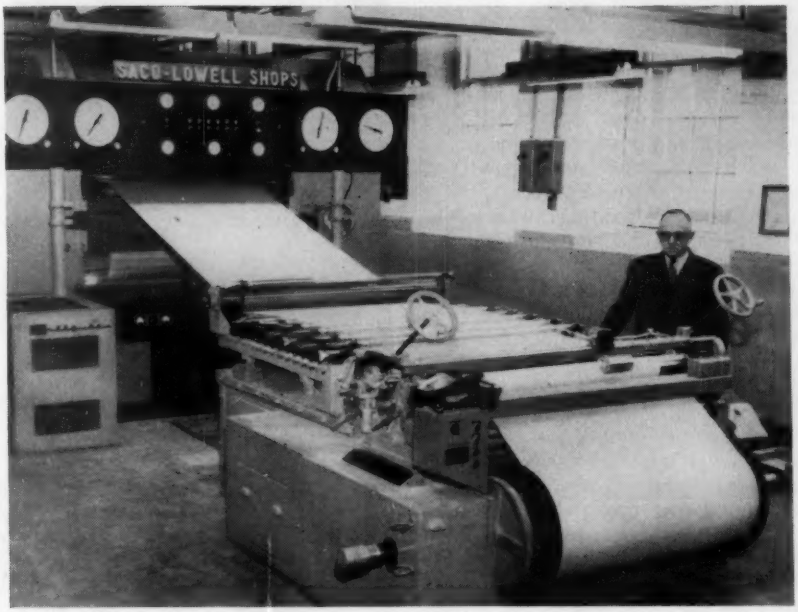



## Positrol Air Drying Slasher

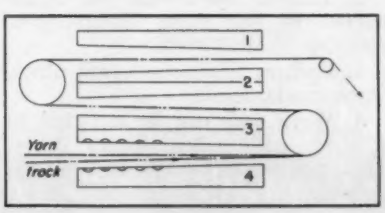
The Positrol air drying slasher, developed by Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass., positively controls the level, temperature, and application of size; temperature and moisture of the air; yarn tension; sheet width in the dryer; loom-beam density; yarn regain; humidity of the exhausted air and humidity in each compartment; press-roll loading; and yarn speed.

The slasher is applicable to mills running cotton, synthetics, blends, filament yarn, and worsted yarn. It is equally good for high- or low-sley warps.

Rolled yarn, hard size, overdrying, and similar defects are eliminated. The yarn is brought up to a drying temperature gradually to avoid a surface crust, which traps moisture in the core; and the yarn is dried from the center out.

Four major assemblies are built into the unit: magazine reel, size vat, drying chamber, and head end.

The size vat is constructed of one type of material to keep electrolysis to a minimum. A 28-gallon unit is used to avoid collection pockets, to keep a fresh supply of size, and to save on steam. The rolls provide a churning action to keep agitation to a minimum. As a result of convection currents and yarn movement, the size is in constant circulation in a more or less horizontal plane. Level and temperature controls are automatic.




**THREE PASSES are made through the Saco-Lowell slasher. The yarn sheet is horizontal except in passing over the guide pulleys, which are large to assure complete control and freedom from the laps.**

Two rolls are stainless steel and two are covered with a special rubber covering, which is very hard next to the steel shell but softer toward the outside; and each individual thread sinks into the soft rubber.

The yarn, coming from the creel, passes over the top of the back size roll and then through the nip of the squeeze roll. This nip is formed under the size. In the nip of the rolls, the air in the yarn is forced out by heat and pressure. Then the yarn expands and absorbs more size as the sheet travels toward the nip of the finishing rolls. For about 75% of travel, the yarn is completely immersed.

With the finishing roll under a light pressure, surplus size is removed and the yarn retains its cylindrical shape. Connecting film is completely absent.

Two major characteristics of the Saco-Lowell unit: (1) the movement of air is in the opposite direction to that of the yarn, and (2) the air with the greatest moisture content is in contact with the wettest yarn.

Insulated walls, with transite sides and 2-in. glass-mat insulation, are pneumatically sealed to prevent radiation. Panels are readily removable for inspection and cleaning, and there are several inspection ports.

The yarn sheet makes three passes through drying chambers.

The entering air first passes through a filter; then through a heater to the blower, which discharges it to a duct emptying into a plenum. From the plenum, the air recirculates until it reaches a point of saturation. In the recirculating cycle, part of the satu-

rated air is discharged through the automatic damper. This deficiency is made up by air from the room moving into the third pass. Part of the air in the third pass moves down to the second pass, and part of the air thus displaced moves into the third pass.

The plenum unit is made up of four chambers: two singles and two doubles, with 20 nozzles in the singles and 40 nozzles in the doubles; nozzles are opposite each other in opposing chambers. This pass is where the drying action takes place.

The yarn travels in a straight line perpendicular to the axis of the carrier rolls. A controlled temperature gradient is maintained throughout each of the drying chambers.

At the discharge point, the yarn may contain as much as 15% moisture. But a cooling fan and the movement of the yarn through the head end brings the moisture content to 6, 7, or 8%, as required.

A set of adjustable baffles at each side of the plenum chambers regulate conditions along the selvages of the yarn sheet.

The slasher will be equipped with a Model 45 head and a multimotor drive supplied by a leading manufacturer. **(T-1)**

## Automatic Hosiery-Dyeing and -Finishing Machine

A new machine developed by H. E. and G. H. Brewin of Dyotherm Corp., Clementon, N. J., preboards, dyes, dries, and final boards about 100 doz. nylon hosiery per 8-hr. shift. The machine eliminates pinning, sorting, dyeing machines, and the folding and placing of stockings in dye bags.

Floor space is saved because the machine requires only 66 sq. ft. of floor space. Time is saved because the complete cycle takes only about 7½ mins. A sample can be taken from the knitting machine and be finished on the pairers' counter in 30 mins.

The yield of perfect goods is increased and mends are reduced because handling is reduced, working conditions are improved, and color-matching control is absolute.

The machine is 12 ft., 4 ins. high and has two tanks that contain the dye liquor for two shifts. The tanks may contain two different dye liquors, and their contents are constantly under mild agitation.

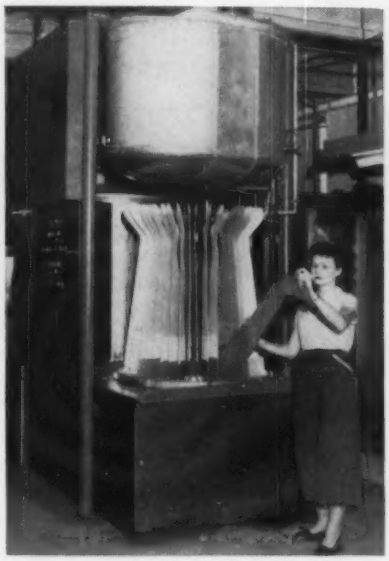
The initial dyebath is made to the dyer's specifications for shade. The same formula is used for subsequent lots, and shades are identical because temperatures and times are automatically controlled in a closed system. The operator merely presses a button to start the cycle.

The cycle starts when the form ring, which holds 48 stocking forms, slides to the processing position. A second form ring, which has been in the processing position, moves to the unloading and loading position.

A bell is hydraulically lowered over the stockings to be dyed and locked and sealed in position. While the form rings are changing positions and the bell is lowered, dye solutions are metered into a closed circulating system. Dye solutions are sprayed from revolving heads. The liquor falls into the base of the dye chamber and is recirculated through the system.

Heating coils in the base of the bell keep the temperature to about 230° F. This high temperature allows preboarding to take place in the 4½-min. dyeing cycle. The dye solutions are then exhausted, and heated air is blown through the bell for the drying cycle. The metering tank is filled for the next cycle during drying.

The bell then rises and the table moves to its original position so that the stockings on the forms can be removed while the stockings on the second form ring move into position



to be dyed. The form ring turns slowly while it is loaded and unloaded, and it can be removed for quick change-overs to fresh sizes.

The finish on the stockings is close to permanent, and the stockings retain their soft hand after many washings. **(T-2)**

## Static Eliminator for Looms

The Portland Co., 28 Fore St., Portland, Me., has announced the availability of an effective static eliminator for looms. Quality is improved, seconds are reduced, and production is increased.

The Chapman static eliminator, Model A2-L, is electrically operated. It has a small power unit that energizes one or two inductor bars, as necessary, installed across the width of the loom.

These inductor bars provide a constant field of ionized air, which neutralizes charged ends. The following static problems are overcome:

1. Lint and dust, which accumulate on drop wires or heddles, are attracted to the warp and woven into the cloth. Heavy streaks result.
2. Yarn in the shuttle can be attracted to the loom. Looping or snagging result.
3. Ends or fibers repel each other. Static cracks result.
4. Warp ends can be attracted to adjacent ends when breaks occur. Then the stop motion doesn't operate properly.
5. Excessive moisture is no longer necessary for controlling static.

The equipment works on wool, cotton, synthetics, plastics, or blends. **(T-3)**

## Trumpet Guides

New AlSiMag trumpet guides and trumpet inserts, made by American Lava Corp., Chattanooga 5, Tenn., are available for testing purposes. The new guides help to maintain uniform tension, increase sliver uniformity, and reduce sliver breakage on roving, drawing, and carding equipment.

Mills report no signs of wear after several months' use. Some of the guides already on test are made of AlSiMag 192 (standard) and some of AlSiMag 513 (super long wearing). Both types have a smooth finish and are manufactured to close tolerances. **(T-4)**

# SAVE IN PRODUCT HANDLING...

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## Cone Winder for Spun Yarns

The Schweiter Vario Coner, a knitting-cone winder for all spun yarns, is available from American Schweiter Co., 22 Ashmont Ave., Whitinsville, Mass. A cross-wound package with a progressive taper is built on a paper tube with a taper of 9°15′. The final taper is about 13°.

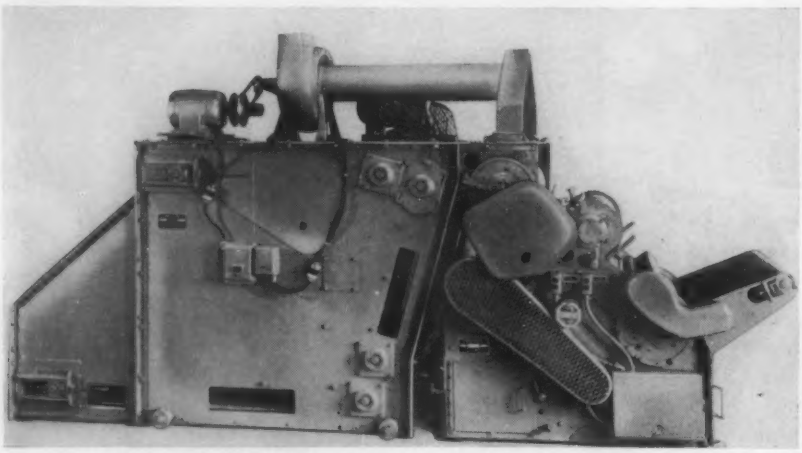
Winding length is 5⅞ ins.; diameter is 9⅞ ins.; and cone weight is approximately 4½ lbs.

Each winding unit operates independently, and the drive is through a friction disk. All mechanisms are enclosed in an oil-tight casing.

Features: (1) hard or soft, but uniform density; (2) automatic stop motion for skein entanglement; (3) gears run in oil; (4) patented gear-driven waxing device; (5. differential gearing to prevent ribbon winds; (6) sapphire thread guides; (7) two-disk tension; and (8) self-threading yarn guide.

In winding from cops, yarn speed is about 360 yds. per min.; from skeins, production is about 200 yds. per min.

All difficult yarns, such as cashmeres, boucles, ratine, Dacron, Acrilan, and nylon, as well as woolen and worsteds, can be handled. (T-5)



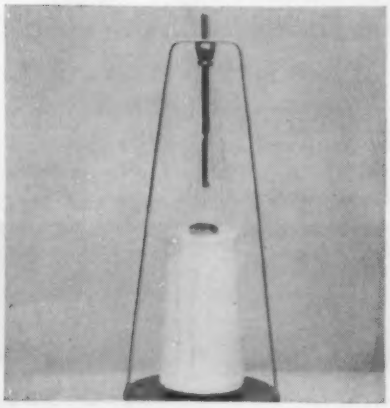
## Improved Sandwich Blender

Curlator Corp., East Rochester, N. Y., has announced an improved Model 40-B Rando-Feeder and Rando-Webber.

Using the basic design, the improved Rando-Feeder has a constant output rate from full hopper to almost empty and requires less operator attention. Several of the major improvements are: (1) The enlarged hopper has a full 50-cu.-ft. capacity. (2) The floor apron gives even pressure of fiber on the elevating apron with adjustable speed. (3) The stripper apron returns excess fiber to the rear of the hopper and prevents jamming at the elevating apron; there is no feeler plate or start-stop action. (4) The rotary condenser-screen box eliminates screen belts. (5) Improved selective output control is unaffected by wide variations in hopper level.

The improved Rando-Feeder can be used for blending. A continuous sandwich blend made with three or more Rando-Feeders in line shows uniformity in depth, width, and length, inch by inch and yard by yard.

The Rando-Webber has also been completely redesigned, but it incorporates the same principles and functions of the original machine. The performance is improved both in random webs and output efficiency. In addition, maintenance is minimized by using heavier motors and drives and locating them where they are readily accessible. The machine has a new double-drive rotary condenser, which is interchangeable with the feeder condenser; a minimum of spares is needed. Sizes: 40, 60, and 84 ins. (T-6)



## Hosiery-Machine Tension Device

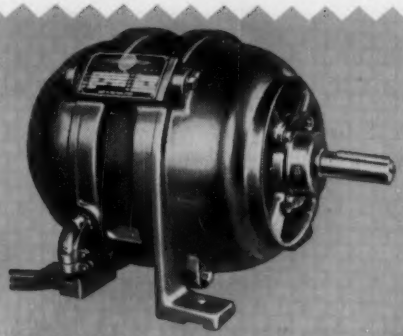
The Neversnarl yarn-control unit controls and eliminates high-twist yarn snarling at the source, according to its manufacturer, The Bentley Knitting Machinery Organization, Inc., 31 Canal St., Providence, R. I.

The device can be used on seamless-hose and full-fashioned machines, and it is particularly useful with stretch yarns. It eliminates all other tensions except the feed tension. The unit is used without conditioning boxes.

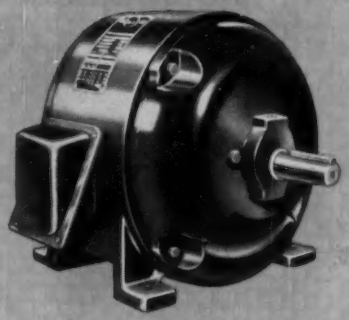
Seconds, irregulars, and downtime are reduced; and the yarn will run off to the empty cone.

Suspending strands, which hold the cone, are made of nylon monofilament, which will not fray; and yarns will not cling to it. The ring weight creates the necessary light tension on the single strand of yarn coming off the cone, regardless of the running position. So a more-regular control of stitch and length can be obtained without varying the tension.

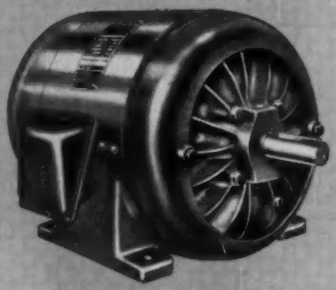
Once the tension is set, the operator need not touch the cone again until it is removed. (T-7)



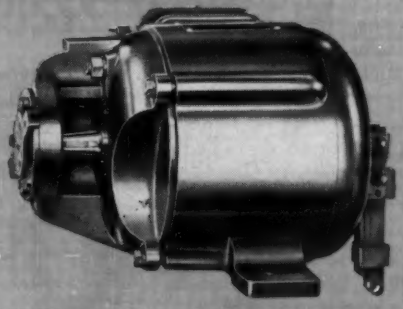
**FOR LINT-FILLED ATMOSPHERES** *specify* **a DIEHL Type "DIT" Lint-Free Motor. In all mill operations where fly is present, the special construction of this motor assures protection and long life. Special features—rigid end cover construction and Hyatt roller bearing at pulley end.**



**FOR GENERAL MILL APPLICATION** *specify* **a DIEHL Type "DI" Standard Motor. An economical and versatile power plant, it is adaptable to compressors, pumps, conveyors, air conditioners, blowers, etc.**



**FOR FINISHING AND DYE PLANTS** *specify* **a DIEHL Type "DIF" Totally Enclosed Fan-Cooled Motor. Complete protection of the internal parts is provided by a full enclosure; high efficiency is aided by the cooling effect of the large external fan.**



**FOR DRIVING LOOMS** *specify* **a DIEHL Power Transmitter. The construction and "built-in" inertia of this integrated unit permit maximum weaving speeds with greatest operating efficiency.**

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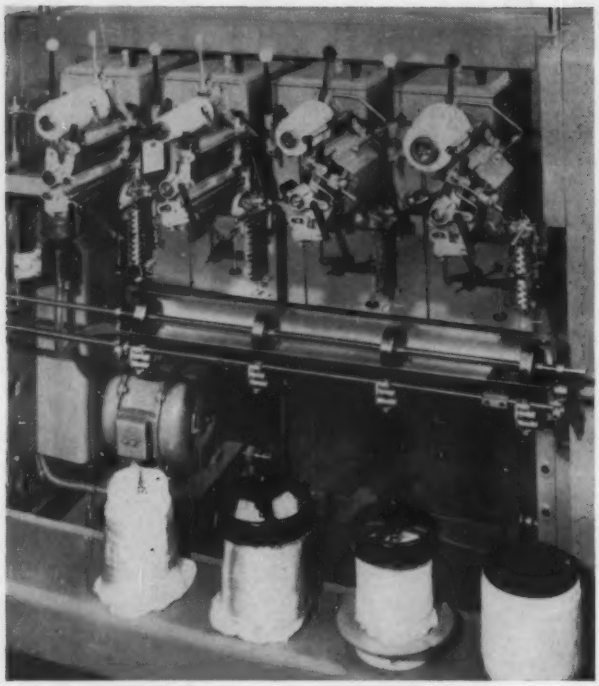

## Cone Winder for Filament Yarns

The Schweiter Monfil-Coner is designed for filament winding in throwing plants and hosiery mills. Available from American Schweiter Co., 22 Ashmont Ave., Whitinsville, Mass., the coner is a precision cross-winding machine that handles all kinds of filament yarn.

For hosiery mills, the coner can be adapted to produce conical bobbins with laterally beveled flanges—pineapple cones—on paper tubes with a 3°30′ or 3°51′ taper. The pineapple cone weighs over 18 oz., and a tapered soft-winding roller is used to make the cones.

The cones are built by Schweiter's Penta open-winding system, which keeps thread layers from slipping down and provides a stable cone. The machine operates at either a constant spindle speed or a constant yarn speed. However, it is also possible to increase the yarn speed slightly, which provides the best production operation.

A four-step pulley drive provides spindle speeds of 1,650, 1,380, 1,100, and 875 rpm. With 3.2 winds per single stroke, yarn speeds on single-thread work, with slightly increasing yarn speed (using a 3°30′ tube with 7⅛-in. length, 2⅛-in. inner dia., and 4¾-in. final dia.):

| | Step 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| At final dia.: | 445 | 375 | 295 | 235 |
| At start: | 385 | 325 | 255 | 205 |

(T-8)

## Nylon-Bonding Attachment

A nylon-bonding attachment for winders has been developed by Oscar Heineman Corp., Armitage, Fairfield & Washtenaw Ave., Chicago 47, Ill. The attachment is being made available on a lease basis, and the bonding fluid can be supplied.

The device eliminates knots and allows large-package, knotfree cones and tubes to be wound. However, the device cannot be used on tightly twisted yarn. On yarn with a loose twist, the two ends are fluffed together and a drop of bonding agent is applied; then the ends are sealed on a heated plate. The bond can be dyed to the same color as the thread.

Mounted on two wheels, the device travels back and forth on a track.

A voltage regulator keeps the heat at an even temperature, and 100-v., a.c. current is used. An air cylinder provides 20 to 50 lbs. of pressure for the sealing plate. Warm-up time is about 10 mins. (T-9)

## High Capacity Chlorinator

Designed to feed chlorine to solutions, a new chlorinator uses a diaphragm regulator to permit a fully enclosed, safe, and reliable machine. It has a fiber-glass polymer-impregnated case and other parts are also corrosionproof.

Manual adjustment of chlorine gas injection is made by the rate valve on the front of the cabinet, and the actual flow rate is observed through the glass flow meter. Six metering tube and float combinations, interchangeable from the front of the cabinet, provide 10 to 1 or greater overlapping flow ranges from a minimum of 100 lbs. per day to a maximum of 8,000 lbs. per day of gas.

Automatic functions are also available to provide: (1) automatic proportioning by a transmitted pneumatic signal; (2) automatic proportioning by mechanical connection; (3) remote pneumatic set; (4) program controlled operation—single or multiple cam-operated; (5) timer sequence control; (6) automatic pump sequence control; (7) automatic start-stop control.

The manufacturers: Fisher & Porter Co., 296 Jacksonville Road, Hatboro, Pa. (T-10)

## Photoelectric Wool-Card Control

In conjunction with the Wool Industries Research Assn., Leeds, England, the Lancashire Dynamo Electronic Products Ltd., London, S. W. 1, England, has developed a photoelectric element to control the weight of web in wool carding. The cell measures the weight by recording the intensity of a beam passed through the web: the change in intensity is proportional to the change in weight. The variations in electrical output of the cell are then used to operate servomotors to control the carding process. (T-11)

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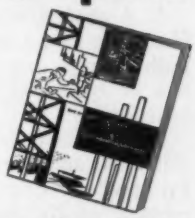

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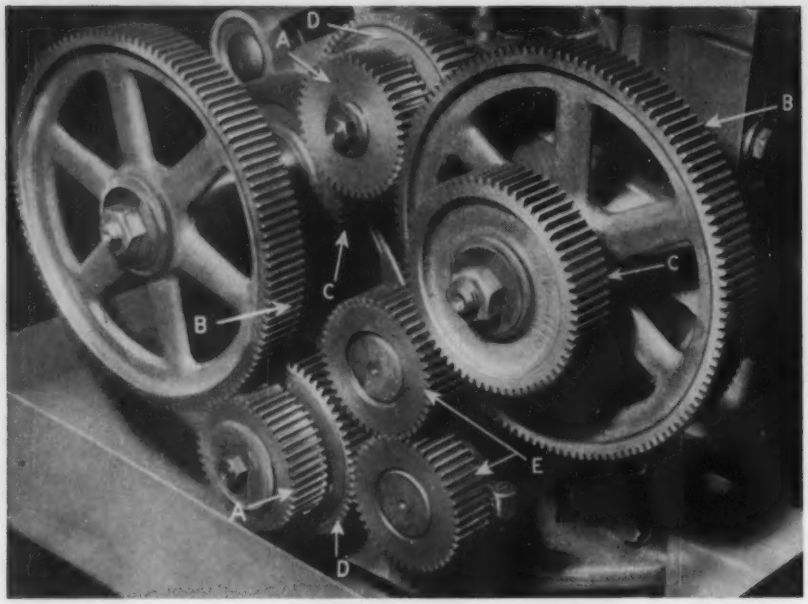


## Novelty-Yarn Attachment

With the Whitin duplex-splash attachment, available from Whitin Machine Works, Whitinsville, Mass., yarns with alternating colors of splash segments can be produced.

The attachment increases and decreases the speed of both the upper and lower delivery rolls independently. It is applied at the foot end of the twister; and the essential feature is the application of a roller clutch gear to both lines of delivery rolls, with change gears provided for each line.

A splash yarn is formed when either line of delivery rolls is rotated at a slower speed than the other line of rolls.

With reference to the picture, the gears are: *A* roll gears; *B* crown gears; *C* change gears; *D* slip gears; *E* intermediate gears. **(T-12)**

## Control-Roll for Cards

A simplified control-roll assembly for cards, adaptable for cotton or synthetics, is available from Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

For cotton, the assembly has a single 2 7/8-in. control roll with a standard mote knife. For synthetics, the mote knife is omitted. The assembly consists of a standard feed plate, a fluted feed roll under pressure, and a lickerin.

An improved web is produced. **(T-13)**

## Braider Bobbins

Two new braider bobbins and a cop holder, all made from Zytel nylon, are available from Plastic Mold & Engineering Co., 157 Clifford St., Providence 3, R. I. They are designed for precise and uniform packaging, high-speed winding, and automatic cut-off (except for the cop holder) for braiding mills. The molded nylon is durable, dimensionally uniform and stable, abrasion resistant, and chemically resistant to detergent cleaning. **(T-14)**

## Balmes Draft System

The Balmes drafting assembly is available through McGlynn Hays Industries, Inc., 71 Rutgers St., Belleville, N. J. The system will handle fibers from ¾- to 4-in. staple. The system fits 35° or 60° roller stands.

Features of the system:

1. A control roller provides a constant pressure on the fibers at all positions. Its movement is synchronized with both traverse bars. The roller delivers a ribbon of fiber, free of twist and closely condensed, to the front draft zone.

2. An automatic central pressure arm provides perfect alignment and constant pressure on each line of top rolls. Pressure is regulated from one point: with the correct pressure on the front top roll, the third and fourth top rolls are automatically regulated.

3. The front condenser is self-threading, and it requires no maintenance. The traverse arm, at the rear of the condenser, fits into a slot on the middle traverse rod; it is easily positioned and will not fall down when the top rolls are removed. Made in two-spindle units, the condenser is available in various widths to suit all spindle gauges. **(T-15)**

## Full-Fashioned Outerwear Machine

Speeds up to 90 courses per minute are claimed for a new full-fashioned outerwear machine developed by S. A. Monk Ltd., Sutton-in-Ashfield, Notts., England. Fewer moving parts, with fewer adjustments and less wear, are the results of the new principle used.

The machine knits full width at 70 courses per minute and speeds up with each fashioning movement. Automatic correcting devices reduce mechanical failures.

The machine is to be built with 4, 6, 8, 12, or 18 sections. **(T-16)**

## Cement for Loom Leather

A cement designed for cementing leather to box plates and box binders on looms is available from Nevel Co., 6432 Cass Ave., Detroit 2, Mich. This cement pours smoothly, grips like iron, and prevents slippage. By retaining its strength and consistency, it lasts longer and does not dry out and does not harden or thicken. Samples will be sent on request. **(T-17)**

## each one a Single Source for RESOURCEFUL SERVICE!

The needs of the textile industry are *best* served *by* service. That's why your Swift's Soap needs are attended to through a dependable network of 375 sales and distribution points located throughout the U. S. and Canada. Through constant, on-the-spot service to the varied needs of our many customers, Swift & Company has built a background of experience with *your* soap problems that draws upon 40 years of supplying to the textile industry. Backed by *practical* research, occasioned by day to day dyeing, fulling and scouring needs, your Swift's man is resourceful, dependable . . . a *single* nearby source for a versatile line of soap and detergent products for your every requirement. The list at left represents but a few of the many textile soap products available on immediate delivery — look it over, write for details and remember . . .

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- Vertex Flakes
- 557 Flakes
- White Ribbon Chips
- Wool Flakes
- Flotewite Flakes
- Solar Neutral Synthetic
- T-25 Soap Flakes
- Gold Medal Flakes
- Solar Liquid Synthetic (Amine Condensate)

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## Recording Tensiometer

A high-speed recording tensiometer, developed by the Summit Research Laboratories of Celanese Corp. of America for the measurement and regulation of yarn tension, is being produced by Custom Scientific Instruments, Inc., Arlington, N. J. The instrument is also applicable to the study of surfaces in contact with a running yarn. Small bearings can be introduced into the system to produce tension-variation patterns characteristic of the mechanical parts.

The instrument has a frequency response up to 120 cycles per second and a sensitivity as high as 4-mm. deflection, on a standard direct-writing recorder, per gram of tension in the yarn. Even at this high sensitivity, the instrument can be used under normal plant conditions. Heavy machine and plant vibrations have no effect on the tensionmeter; the record produced is a true record of tension variation.

The sensing head is compact and rugged, with a beam transducer using bonded resistance strain gauges. Stops are provided to prevent overstressing the beams. To use the instrument, pulleys are placed over the running yarn, and the sensing head is twisted until the yarn forms an S over the pulleys.

Two ranges are available:

With steel beam head: maximum sensitivity: 1-mm. deflection per gram tension; maximum range: 300 grams.

With aluminum beam head: maximum sensitivity: 4-mm. deflection per gram tension; maximum range: 100 grams.

Pulleys have ball-bearing inserts.

The recorder is a Sanborn direct-writing, single-channel, five-speed unit.

Paper speed is 5, 10, 25, 50, and 100 mm. per sec.

Cabinet dimensions: 20x22x38 ins.

The rolling cart, with post attached, has joints and a clamp for positioning the sensing head. **(T-18)**

## Roll Former for Jute Drawing

A roll former for the first jute drawing frame has been put into production by Fairbairn Lawson Combe Barbour Ltd., Leeds 1, England. The over-all height of the drawing frame has been reduced, and it is easier for the operator to see the faller bed. The use of this roll former instead of cans gives the following advantages:

1. A roll 48 ins. in diameter by 3½ ins. wide weighs 125 lbs., which, at 150 lbs. per 1,000 yds., gives at least 800 yds. in a continuous length of sliver.

2. The number of splices is greatly reduced.

3. The sliver is in a better condition, without twists or kinks, for the second passage of drawing frames.

4. It is easier to see when a roll has run out at the feed. A missing roll can be spotted yards away.

5. Rolls can be stored in less space. **(T-19)**

## Noise Barrier

Bemis Bro. Bag Co., 325 27th Ave., Minneapolis, Minn., has developed a new product called TransWall, a lightweight, retractable sound-barrier curtain designed for industrial applications. The curtain is made of a flame-resistant and sound-reflecting material known as Bemisorb, a specially treated and coated burlap.

Designed and engineered for individual applications, TransWalls can be installed anywhere to isolate machine and production noise and in areas that are potential fire hazards or that are otherwise dangerous to employees. **(T-20)**

## Hosiery Packaging Machine

A machine that packs hosiery in cellophane bags at the rate of 2,000 pairs an hour is announced by Fr. Hesser Maschinefabrik AG, Stuttgart-Bad Cannstatt, Germany.

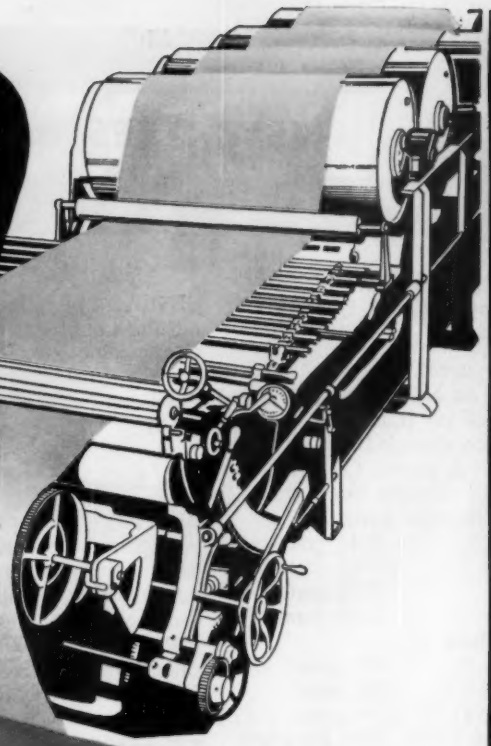
The machine folds the stockings in pairs, picks them up, and places them in a cellophane bag. The bags are labeled on the machine to indicate size, type, and price.

The bags are closed and sealed with an adhesive band cut from a roll. Packed stockings leave the machine on a conveyor band in piles of three pairs. **(T-21)**

CONTINUED ON PAGE 206

SEALMASTER

# BALL BEARING UNITS *Deliver the Goods!*



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# NEW DYES and CHEMICALS

### Sequestering Agent

**Kalex G** . . . developed as a specific sequestering agent for heavy metal ions claimed to have the highest chelating value of any product now available. Not recommended for sequestration of alkaline earths. One gram of Kalex G will chelate the following amounts of metallic ions:

| | |
|---|---|
| Nickel | 0.44 gram |
| Cobalt | 0.62 gram |
| Zinc | 0.38 gram |
| Copper | 0.90 gram |
| Ferric Iron | |
| pH = 7 | 0.90 gram |
| pH = 9 | 1.30 grams |
| pH = 11 | 1.7 grams |

Hart Products Corp., 1440 Broadway, New York, N. Y. **(D-1)**

### Resin for Synthetics

**Syncap ON** . . . for durable stiff finishes in the taffeta and parchmentized range on nylons. Marquisettes and sheers develop maximum flame resistance with this product, according to the manufacturer. Crown Chemical Corp., Providence, R. I. **(D-2)**

### Water-Soluble Pad Colors

**Pad Colors** . . . suitable for either hot-water or pad-steam application on acetate and nylon fabrics are now available in a series of shades including Blue B5, Blue G5, Yellow G5, Orange 3RS, Scarlet B5, Red R5, and Rubine BB5. Applicable to gray goods without the addition of detergents or penetrants, colors are claimed to eliminate shading and tailing off. Pad Dye Corp., 65 Crosby Place, Paterson, N. J. **(D-3)**

### Dye Solvent

**Xynosolve** . . . improves dispersion of pigments, increases penetration and color yield, gives smoother prints on difficult fabrics. Improves solubility of dyes, washing properties of print pastes, and ageing and steaming results. Onyx Oil & Chemical Co., Jersey City, N. J. **(D-4)**

### Silicone Catalysts

**Zinc and Stannous Catalysts** . . . for use with silicone resins used for water-repellent finishes on textiles. Advance Solvents & Chemical Corp., New York 16, N. Y. **(D-5)**

### Epoxy Resin

**Epoxy Resin Water Emulsion** . . . produces clear, lustrous film on textiles. Supplied as a 40% emulsion. May be used as a noncuring thermoplastic resin that is water resistant. When cured, it is resistant to dry-cleaning chemicals and greases. Compatible with practically all textile-finishing materials, it is claimed to be useful on all synthetic fibers in sizing or finishing operations. Combines with amine aldehyde and polyamide resins to form thermosetting insoluble resins. Chemical Products Corp., West Paterson, N. J. **(D-6)**

### Bleach Stabilizer

**Sunolox** . . . a water-soluble inorganic product for use with chlorine or peroxide bleaching baths. Improves bleaching action, reduces dyeing difficulties, and saves time and water in subsequent rinsing operations. Applicable in kiers, dyebecks, pads, jigs, and rope or open-width bleaching ranges. No harmful effects on fabrics, colors, or skin have been observed in the use of the product. Pennsylvania Salt Mfg. Co., Philadelphia 7, Pa. **(D-7)**

### Emulsifiable Polyethylenes

**A-C Polyethylene** . . . an easily emulsified product that gives stable, clear, high-solids-content emulsions valuable in coating textiles. Small particle size and light color are claimed as advantages. Semet-Solvay Petrochemical Divs., Allied Chemical & Dye Corp., New York 6, N. Y. **(D-8)**

### Dye Carrier

**Dacro-Dye** . . . a carrier for dyeing Dacron with dispersed-type dyestuffs. Free flowing and self-emulsifying, the product is said to have a high shelf life and to be efficient and economical. Toxic effects are at a minimum. Metro-Atlantic, Centredale, R. I. **(D-9)**

---

# New Polymer Promises Improved FLAME RESISTANCE

PROMISING RESULTS in durable flameproofing of cotton fabrics with an organic phosphorous-bromine polymer have been obtained at Southern Regional Research Laboratory. Bromoform and triallyl phosphate are the basic raw materials used.

Two formulas (in parts for 1,000-parts emulsion) used successfully are:

| | |
|---|---|
| **33% emulsion** | |
| Triallyl phosphate | 189 |
| Bromoform | 132 |
| Polyvinyl alcohol (medium viscosity) | 6 |
| Sodium bicarbonate | 24 |
| Potassium persulfate | 6 |
| Water | 643 |
| **40% emulsion** | |
| Triallyl phosphate | 236 |
| Bromoform | 164 |
| Nonionic emulsifying agent | 2 |
| Polyvinyl alcohol (medium viscosity) | 8 |
| Sodium bicarbonate | 32 |
| Potassium persulfate | 10 |
| Water | 548 |

*From a paper presented at the Third Chemical Finishing Conference, Washington, D. C., by J. David Reid.*

### Here's SRRL's Method

The emulsion is prepared in a round-bottom flask pro-

CONTINUED ON PAGE 194

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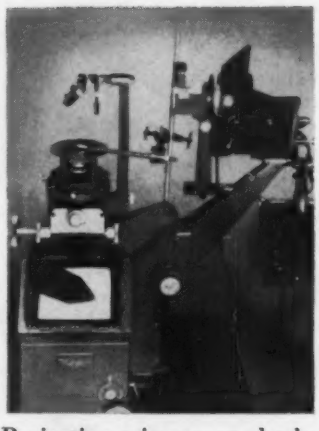

Projection microscope checks profile of spindle point.

a. h.

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# QUESTIONS and ANSWERS

## This Tulle Can't Be Made On Tricot Machines

**Technical Editor:**

**Why can't the tulle or bridal veiling described on p. 124, TW, Nov. '54, be made on tricot machines? (9867)**

The hexagon-shaped holes in this net are made by chain stitching on the front bar and laying in on the back bar. There are crossovers of the stitches from one needle to the next only at every third course.

The object of sinkers on a tricot machine is to prevent these crossover stitches rising with the needle when the needle rises to receive its new stitch. If there are no crossover stitches, the fabric will rise with the needle and the stitch will not drop below the needle beard.

Raschel machines do not usually have sinkers, but the fabric is pulled down the needle stem by a tension roll. The tension roll is situated under the needles; and as the needles are almost vertical, the pull is almost straight down. This condition allows this tulle to be made on raschel machines, which have no sinkers.

## Three Methods To Make Knitted Ties

**Technical Editor:**

**What types of machines are used to make knitted ties? (9865)**

Knitted-tie fabrics are made on three different machines: tricot, circular-tie, and full-fashioned machines.

Fabrics for ties on two- or three-bar tricot machines are made in jersey stitch or in a fancy stitch on 28-gauge machines. Nylon and acetate yarns are used. Vertical stripes are made in the fabric by threading one or more bars with different-colored yarns. The fancy stitches are made with special pattern wheels and partially threaded guide bars.

The circular-tie machines have a small cylinder containing about 60 needles. There are two feeds on these machines. A pattern wheel is generally positioned at one feed, although some patterns are made with two wheels. The production on these machines is very high. The fabric is made tubular and the tube seamed at both ends to complete the tie. A chain is sometimes incorporated to take the pattern wheels out of action to give shape to the tie.

Full-fashioned ties are usually made on hand-operated frames in silk or nylon. Several ties are made on one needle bar, and a cut presser is generally used to produce a fancy tuck stitch. The fashioned tie is seamed down the back in a similar way to full-fashioned stockings.

## Try Oval-Wire Travelers For Rayon Spinning

**Technical Editor:**

**We are spinning 20s yarn from 25% bright and 75% dull rayon. We use No. 6¾-circle travelers on 2¼-in. rings with 4⅜-in. traverse. Our spindle speed is 7,300 rpm., and the 1¼-in. front-roll speed is 110 rpm. Can you give some idea of the expected traveler life and unthreading of the traveler? (9866)**

Your traveler life will be much shorter when you spin rayon than when you spin cotton, although your traveler speed is not excessive. You may be able to improve traveler life by experimenting with oval-wire, duplex-horn, or double-duty travelers.

You might have some unthreading of the travelers if you use a round-point traveler; so try a square-point traveler.

## Shorter-Staple Orlon Requires More Twist

**Technical Editor:**

**If we use a 1-in. cut-staple Orlon instead of 2-in. cut staple, what difference in the yarn should we expect? (9860)**

A 1-in. cut staple will not be spinnable to such high numbers as a 2-in. cut staple. If you spin a 1/30 from 1-in. staple Orlon, you will have to

---

## TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

*"He wants me to come up some evening and see his tricresyl phosphates!"*

give the yarn a higher twist than if you had used 2-in. staple for the yarn. As the twist affects the bulk and the hand of the fabric made from the yarn, the longer staple will give the loftier yarn.

## Use Rayon Temples To Avoid Pin Marks

**Technical Editor:**

**We're weaving upholstery fabrics from cotton warps and filament-rayon filling. Our pin-type temple rolls are marking our fabrics. What can we do to stop these marks? (9862)**

You need to replace your present temples with temples made especially to weave filament-rayon fabrics. These temples are made to use rubber-covered or cork-covered rolls of approximately 4¼ ins. in length.

The temples should be selected with adjustable caps so that various thicknesses of cloth can be woven with close control of the selvages. Adjustable temple slides should also be used for closer and more-permanent alignment of the temples to the race plate.

## Three Methods To Strip Nylon Hosiery

**Technical Editor:**

**How can I strip tan nylon stockings back to white? Some of the stockings have black seams. (9861)**

The type of dyestuff used will determine the stripping procedure. Here are three methods; if the first is not successful, go on to the second. The third may have to be used for the black-seamed stockings.

1. Make a bath of sodium hydrosulfite and soda ash. Use 1% each on the weight of water. Treat at 180 to 200° F. until the color is stripped.

2. Make a bath of ¼ to ½% Textone with half this amount of acetic acid. Treat at 180° F. until the color is stripped.

3. Make a bath of ¼ to ½% peracetic acid. Run at 160° F. until the color is stripped.

The agents used in the latter two methods are extremely reactive. Use a good exhaust system, and use stainless-steel tubs and buckets. Don't use wooden equipment.

## Cotton Maturity Differs From Crop to Crop

**Technical Editor:**

**What is the standard Micronaire reading for the upland American scale without Causticaire preparation? What reading is apt to give immature fibers, neps, and dyeing troubles? Does this value vary from one state's crop to another? What is the standard Micronaire value above which there will be mature fibers? What are the Micronaire values between which maturity is uncertain and has to be controlled by another method? (9849)**

We have been unable to find records of established Micronaire standards for fineness, with or without Causticaire treatment, for American upland cotton.

One mill reports that it does not require the cotton supplier to guarantee the fineness value of the cotton delivered. It finds that the most desirable average for its work is between Micronaire values 4.0 and 4.3. Trouble has been experienced with cotton showing values between 4.5 and 5.0.

Fineness is recognized as having an important bearing on dyeing results. For uniform dyeing, efforts are made to maintain the same average fineness values for all cotton mixes laid down in the opening room.

The Causticaire method, applied in a test of a composite sample taken from all the bales on the opener floor, showed 77% maturity, which is just above the average on the instrument scale. Tests on last year's cotton gave 87% maturity, which is in the very mature range of the instrument. These comparisons show the difference in yearly crop figures, and this variation could be expected in crops from the different states for different years.

There is a recognized correlation between fiber fineness and neps, but it is not definite enough to establish any well-defined standards. Keeping the same average fineness that has proved to give satisfactory results in the past appears to be the best way to avoid nep and dyeing troubles that can be blamed on variations in fiber fineness.

## Test Wool Batting With Acid Method

**Technical Editor:**

**What is the acid method for determining the wool content in batting? (9859)**

Dry a 2-gram specimen of the wool batting in an air oven to ±0.001 gram. The oven should be 221 to 230° F. Cool the sample in a desiccator, and weigh it again.

Remove any cellulose acetate with acetic acid or acetone. Weigh the sample after cooling and drying. Immerse the specimen for 10 mins. in 200 milliliters of 1% sulfuric acid at the boil. Filter the solution through a sintered-glass crucible, and remove the excess acid by suction.

Immerse the specimen in 200 milliliters of a 70% sulfuric-acid solution at 100° F. for 15 mins. Keep the solution stirred. Collect the undissolved fibers in the crucible, and wash them in cold water.

Immerse the fibers in a 2% solution of sodium bicarbonate for 5 mins. to neutralize any acid present. Wash the fibers again with water. Dry the residue at 221 to 230° F. to find the dry-wool weight.

$$\text{Percentage of dry wool} = \frac{W}{O} \times 100$$

W = weight of dry wool
O = weight of original specimen

## Chitin Has Limited Textile Applications

**Technical Editor:**

**What is chitin, and what are its textile applications? (9842)**

Chitin is a polysaccharide that contains nitrogen and is found in the cell walls of fungi, in the skeletal structure of sea-living crustaceans, and in the outer parts of some insects. Chitin is a white amorphous substance that can be acetylated.

In the last century, chitin was found to have commercial possibilities as a basic material for making films and filaments. In 1936, chitin was deacetylated and was found usable for manufacturing textile filaments.

A 3% aqueous solution of deacetylated chitin of medium viscosity is made insoluble by exposure to ammonia fumes. Purified chitin is also soluble in acids, and filaments can be spun from the solution either in a wet or dry state.

The filaments have a heart-shaped cross section and a tensile strength of 35 kg. per square millimeter. The filaments are lustrous and pale, and they resemble silk filaments.

A yarn made by treating xanthated purified chitin with an alkali and carbon disulfide resembles a regenerated cellulose yarn. The yarn has a dry tensile strength superior to viscose and cuprammonium yarns, but it has a lower wet strength.

As the supply of basic materials is limited, there are no producers of commercial products from chitin.

## Set Workers This Way To Get Uneven Wool Yarns

**Technical Editor:**

**The October issue of Textile World, p. 146, has some suggestions for making uneven wool yarns. Among the suggestions are the settings of workers on each cylinder. The settings of the 1st and 2nd workers on each cylinder only are given. What about the remainder of the workers? (9838)**

The 3rd worker should be set the same as the 1st worker, the 4th worker set the same as the 2nd worker, and so on around each cylinder.

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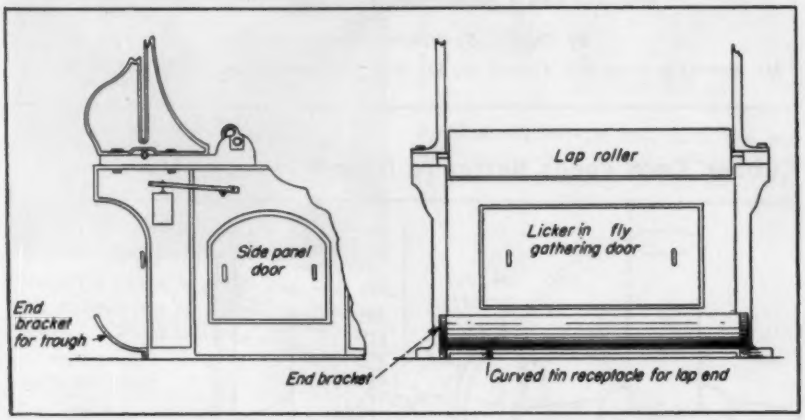
# KINKS and SHORT-CUTS

## Reduce Lap Ends and Fire Hazards




**CURVED TROUGH on cotton card below the lap roller supports ends of low laps and keeps the lap off the floor.**

We had trouble from bad laps caused when our lap tender was careless in changing laps on the card. The lap tender would remove the lap rod when there was still lap to be unwound and open the remaining portion. This end would often hang over the lap roller and dangle on the floor.

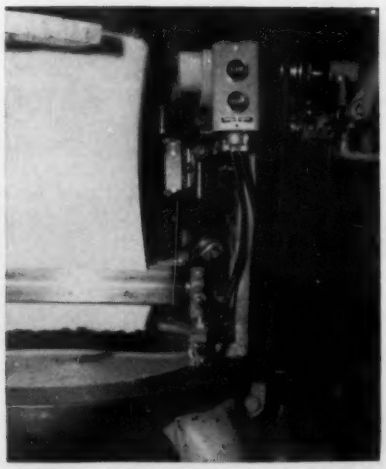
The end of the lap picked up dirt from the floor, and sometimes metal objects would get entangled in the lap. These metal objects damaged the card clothing and often caused fires.

We overcame this trouble by fitting a trough to the card underneath the lap-roll brackets. The trough is made from sheet metal and extends the full width of the card.

Two curved brackets made from 1x⅛-in. mild steel support the trough. The brackets are screwed to the base of the card so that the brackets are 1 in. from the floor. The trough is riveted to the brackets, all sharp edges are smoothed, and the receptacle is painted.

The ends of the old laps now fall into the trough when the lap tender puts in new laps; and we get better carding results. *T. K. Pattabhiram, India.*

## Limit Switch Prevents Knitting-Machine Damage



**STOP-MOTION on circular knitting machine prevents machine damage by stopping the machine immediately when the fabric presses off.**

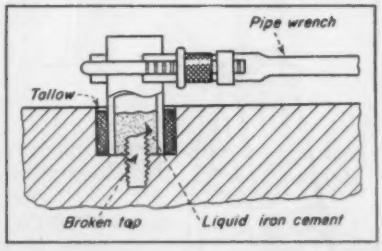
When the fabric presses off a circular rib-knitting machine, several revolutions are made by the cylinder before the machine comes to a stop. This is particularly dangerous on multifeed machines because the many loose yarns break needles.

These press-offs are usually caused by a yarn slub that gets caught in the yarn-feeder eye. Since the yarn still supports the electric stop-motion dropper, the electric stop motion is inoperative.

We overcame this problem by screwing a Micro switch to the base plate of our circular knitters. The switch is positioned immediately below the take-up roller bracket. The switch is wired to the stop-motion controller.

Now, when a press-off occurs, the take-up drops, depresses the switch, and immediately stops the machine.

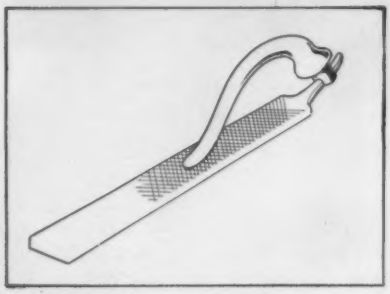
## Broken Taps Removed With Tallow and Glue




We remove broken taps that cannot be gripped with a wrench in the following manner:

Fit loosely a short piece of soft-steel pipe around the tap in the hole, and then run some molten tallow around the outside of the pipe to serve as a lubricant and to act as a seal between the pipe and the hole. Next, put some liquid iron cement in the pipe around the tap. When this sets hard, screw out the pipe and the tap will come with it. *W. E. Warner, Essex, England*

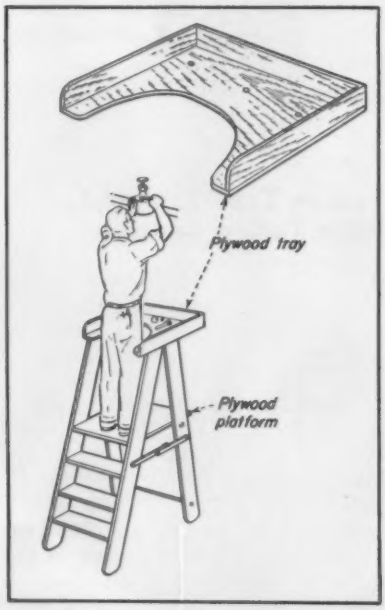
## Auto Handle Makes Filing Easy



DOOR HANDLE fitted onto end of file saves skinned knuckles.

An old automobile door handle has proved to be very useful in filing large flat surfaces. Take an ordinary flat file, bend tapered end slightly, cut tapered slot in auto handle, insert file, and you have a tool that you never will be without. *Ned Machnick, Taunton, Mass.*

## Make Overhead Work Safer




**A TRAY TO HOLD TOOLS is a great help when attached to the top of a stepladder. It is easy to make such a tray from plywood, as illustrated, that can be attached or detached quickly. I also find that a plywood platform for my feet increases safety and comfort. C. H. Willey, Penacook, N. H.**

**[Special stepladder attachments for holding fluorescent lighting fixtures were described in TW, p. 151, Oct. '54.—EDITOR.]**

## Best-Kink Award for February

**Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.**

**If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.**

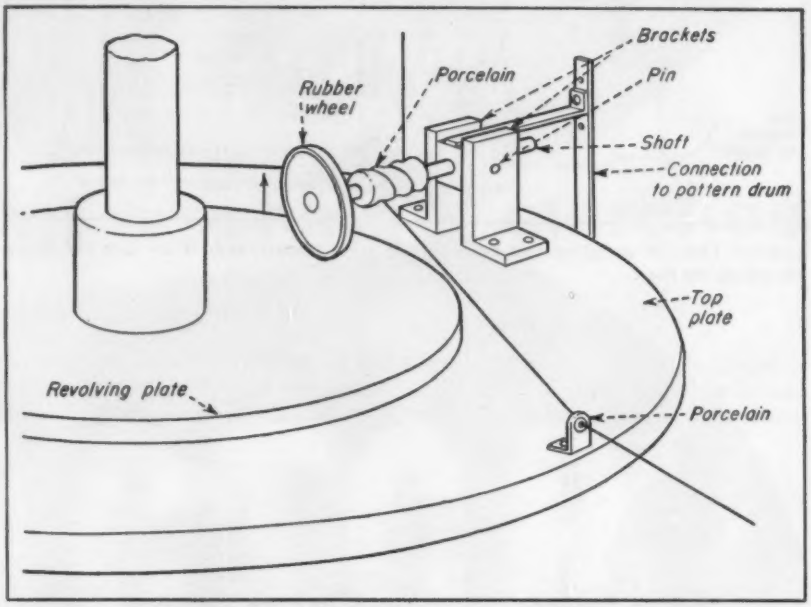
**The best Kink for February, according to TEXTILE WORLD reader-judges, was:**

**"Box-Motion Connectors Require Little Care"**

**By Charles S. Bicksler, Lancaster, Pa.**

**Mr. Bicksler is being sent a check for $25 with the compliments of TEXTILE WORLD.**

## Rubber Yarn Feeds Better to Komet Hosiery Machines




**RUBBER-FEED DEVICE controls the stretch in elastic yarn fed to Komet hosiery machines.**

We made a gadget for our Komet hosiery machines that gave us a very even fabric in the top of the sock. We controlled the amount of rubber yarn in the top.

The device fits on the top plate of the machine over the yarn feed and is supported by two brackets screwed to the stationary part of the plate. You can make it this way:

Fit an 8-in. length of ½-in. rod in a 2x1x1-in. steel block. Drill a ½-in. hole through the center of the block, and fix two short ½-in. pegs in this hole; but allow the shaft to turn in the block. The pegs support the block and allow the rotating shaft to be tilted when the device is out of action.

The block is tilted by a lever from the pattern drum. You can make the bracket connection so that you have plenty of adjustment for wear.

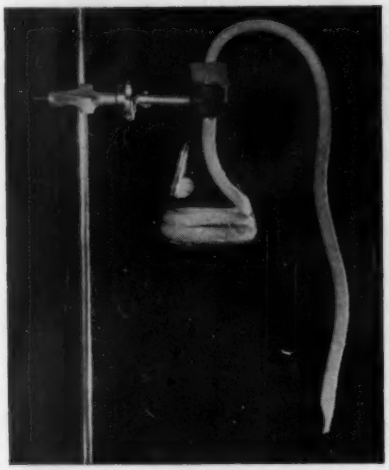
Drive a porcelain on the shaft to prevent the shaft drifting forward. A washer and a split pin will prevent backward drift.

Fix a grooved wheel with a rubber face to the end of the shaft. The edge of the rubber wheel should now be over the rotating part of the top plate.

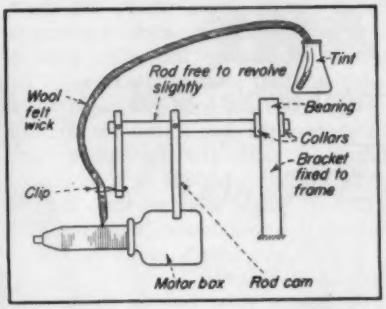
Adjust the lever until the cam on the pattern drum brings the rubber wheel in contact with the rotating disk when the elastic yarn goes into action. You can control the fabric stretch by varying the diameter of the rubber-faced wheel or by wrapping the rubber yarn around the porcelain with more or fewer wraps.

[*Builders of Komet hosiery machines make elastic feeding devices that provide excellent control of rubber yarn.*—EDITOR]

## Full Bobbins Can Be Tinted Automatically on Winder



CHEMIST'S FLASK and felt wick form the basis of apparatus for automatically tinting bobbins.




ADVANCING MOTOR BOX raises cam and wick simultaneously to lessen rubbing action on yarn. Mechanism holds wick out of the way until new bobbin is ready.

Hand application of identification tints to full bobbins and quills is time consuming and frequently results in lack of uniformity. We have developed an automatic system for use on the Abbott winder. The system requires no water, the yarn can be used immediately after tinting, and there is no danger of tension on damp synthetic yarns causing shiners.

We use liquid, oil-soluble fugitive tints dissolved in stoddard solvent, a petroleum compound. The solvent, if pure, will evaporate completely and will not leave residue on the yarn. However, if the solvent is contaminated with mineral oil or other chemicals by careless handling, stains or dye resistance may develop in the finished cloth.

For the tint receptacle, we use a 250-cc. Erlenmeyer flask fitted with a cork stopper. A hole is cut through the stopper to allow passage of a $\frac{3}{8}$-in. round wool-felt wick. One end of the wick rests on the bottom of the flask, and the other end hangs near the base of the bobbin, where it is held with a brass clip. This clip is fastened to a hinge affixed to the frame of the machine. The hinge is raised up and down by a simple cam operated by the approaching bobbin-rotating mechanism.

The end of the felt wick, cut on the bias, is allowed to rub gently on the yarn at the base of the bobbin after the bobbin is full and nearly ready to be doffed. Rubbing action is regulated by bending the cam to a point where it raises the wick enough to decrease friction. Also, the cam prevents the wick from rubbing on metal parts of the winder by holding the wick up until the next bobbin is ready. The cam is made of light metal.

The feeding of the tint is automatic and uniform because of capillary action. There is no dripping from the wick, through which the tint rises. However, the height to which the tint will rise is limited, and we find it better to use a low flask with a large capacity.

Since the equipment is both inexpensive and simple, we keep a separate bottle and wick for each color. This practice facilitates changing colors on the machine. Unused bottles can be cleaned or stored with the wick fastened in a vertical position to prevent dripping.

It is possible to paint two contrasting color rings around a bobbin by rigging two bottles side by side.

A $\frac{3}{8}$-in. round rod fastened vertically to the machine makes a handy holder for attaching the clamps holding the tint bottles.

This process does not work well with water-soluble tints. *Norman S. Buchan, Chelmsford, Mass.*

## Increase Knitting Efficiency by Standing Cones on Floor

FULL YARN CONES are stood on the floor and tied to nearly empty yarn cones on the machine to save machine downtime.

We tried the usual double-tied cones on our Supreme ML machines but found the inside cones difficult to get to; so we used a new way to overcome this difficulty. We found it better than the old method because we never had to stop the machine to put on a new yarn cone.

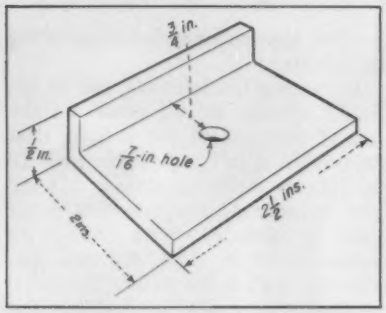
We let the yarn pigtails hang from the cone on the bobbin rack. When the yarn on the cone is nearly exhausted, our knitter ties a new end of yarn from a full cone to the pigtail and stands the full cone on the floor directly underneath the nearly empty cone.

When the yarn runs from the empty cone to the full cone, the knitter lifts the empty cone from the bobbin stand. He then grasps the full cone by the base and puts it in place on the empty bobbin stand. This maneuver requires a little practice and should be learned while the machine is stopped.

The knitters learn to keep the yarn supply on the machine so that no more than four cones are on the floor at one time. We keep our floors spotlessly clean; so we have no fear of dirty yarn.

The knitters like the method because their production is higher.

## Homemade Plate on S-6 Looms Prevents Angle-Iron Breakage




**HOMEMADE PLATE fits between the angle iron for the lay beam and the anchor for the protector-rod spring.**

On our Crompton & Knowles S-6 looms, the anchor for the protector-rod spring cuts into the angle iron for the lay beam. As a result, the angle iron is weakened and sometimes breaks. Replacing the angle iron is a big job that loses production.

We have designed an angle plate to protect the angle iron for the lay beam. To make the angle plates, we:

1. Mill off one side of a length of 2x2x¼-in. angle iron so that the resulting dimensions are 2x½x¼ ins.
2. Cut the length of 2x½-in. stock into 2½-in. lengths.
3. Bore a 7/16-in. hole in the lengthwise center of the 2½-in. lengths of stock ¾ in. from the cut-off edge.

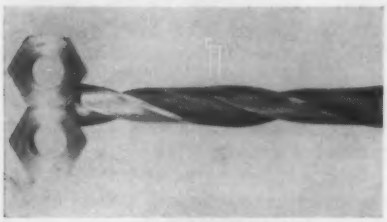
Bolt these angle-iron plates under the angle iron for the lay beam on all looms. Remove the bottom nut from the stud for the reed-adjusting screw nearest the anchor position, and place the homemade plates over the stud with the ½-in. edge up and outside the angle iron for the lay beam. Then, replace the nut.

The cut-off edge of the plate keeps the plate from turning. The flat edge supports the anchor for the spring and receives all wear formerly given to the angle iron for the lay beam.

Although we designed the protective device for our S-6 looms, we also use it on S-5 looms and on a few models of S-3 looms.

The plates give better protective action and completely eliminate wear to the angle iron for the lay beam. *Horace W. Sutherland, Central, S. C.*

## Drill Gauge Can Be Made From Two Nuts



**TWO HEXAGONAL NUTS are soldered together to form a 120° gauge for drill points. This angle is satisfactory for most general shop work.**

Although the recommended angle for the point of a twist drill is 118°, we find that 120° is satisfactory for most general work.

To make a 120° gauge, place together two standard hexagonal nuts, as illustrated. The gauge is used by holding the nuts together with the fingers of one hand, or the nuts can be soft-soldered together for permanent use.

The drill point is ground so that the cutting edges make full-length contact with the faces of the two nuts. The lengths of the cutting edges can be measured by comparing their positions on the nut flats. It is very important that the cutting edges be the same length.

Further, we found it useful to make up a variety of gauges employing different sizes of nuts. This permits drills of different diameters to be gauged against nut flats that match approximately the drill-point cutting edges. *C. T. Bower, London, England*

## $500 for Best Kink in 1955
## $25 for Best Kink Each Month

**In Addition to Space Payment on Acceptance**

**Send in your Kink now. There is always a contest going on.**

**We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.**

**We like ideas for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.**

**RULES OF CONTEST**

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1955.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

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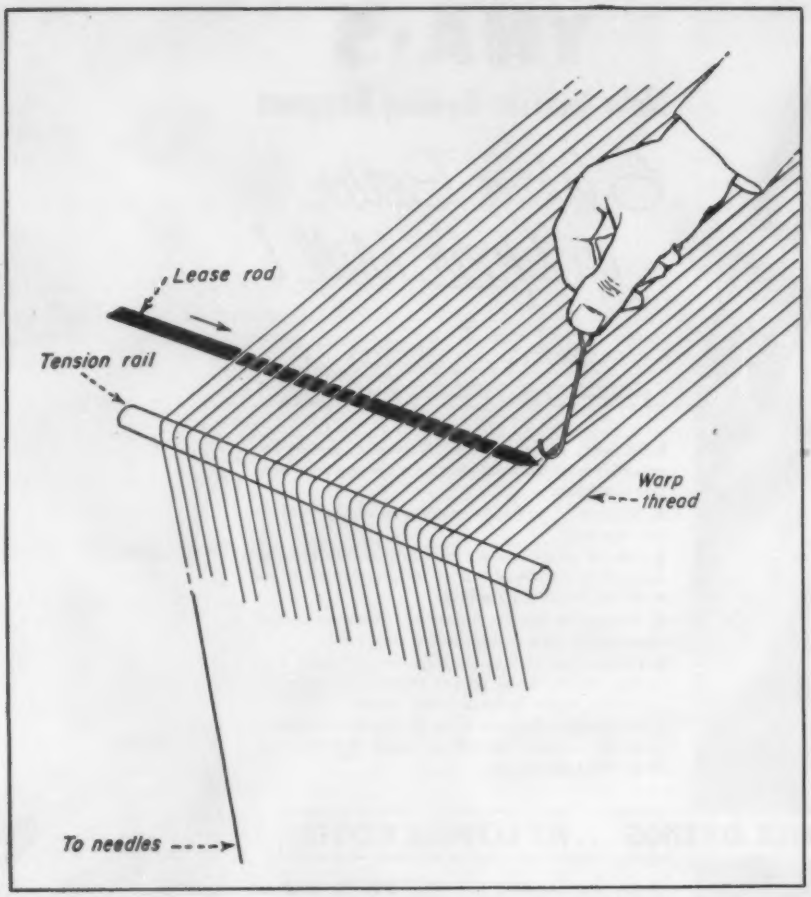
## Save Time on Fancy Tricot Samples




**WARP THREADS are lifted by a hook while the lease rod is pushed through the warp sheet. The separated threads can then be painted to knit fancy patterns.**

Instead of making fancy warps for our colored tricot patterns, we make a solid warp and tint the warp sheet according to the warping specifications. It saves us a lot of time, and we come up with a much greater selection of patterns. Here's how it is done:

Make a solid warp as you would for a plain cloth, and thread the warp in the sample machine. You can color the warp to any pattern any time after you have started to knit.

Insert a lease rod in the warp sheet above the tension rail by lifting one thread at a time with a hook, according to the warping specification. If the specification calls for 10 red and 2 white, lift up 10 threads and insert the lease rod under them. The lease rod is a ¼-in. smooth steel rod with a pointed end.

When the rod has been pushed to the further end of the warp, raise it to make a shed and insert another rod several inches higher on the warp. While the warp is separated, push a 24x12-in. piece of cardboard between the warp sheet. Two people can best do this job.

Use a nylon tint to color the threads. They can be obtained in a wide variety of colors. Apply the tint with a 1-in. paint brush. A hair dryer will help to dry the yarn in a few minutes.

Lift up the warp sheet with the lease rods when you withdraw the cardboard; otherwise, you might damage the warp or discolor the threads.

Fabric can be knitted when the yarns are dry, and you will get enough fabric to give you an idea how the colors work out.

To color the back-bar threads, raise the front bar, cut the threads out and knot them, and raise the bar to the back of the machine. Color the back bar in the same way.

## Beeswax Stops Warp Break-Outs

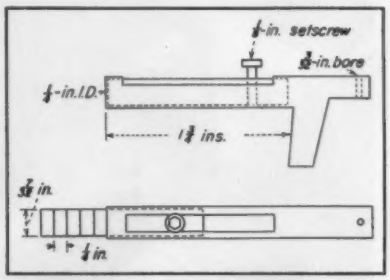
Pins for the eyes in shuttles in Crompton & Knowles shuttle-changing looms and in many hand-changed -shuttle looms often loosen in the shuttle and work out. The result is broken filaments in the warp yarns and warp break-outs.

We use beeswax to hold the pins securely in the shuttles. The pins are driven into the shuttles and recessed with a nail set. The pins should be a little smaller than the holes and should not be burred.

A small sliver of beeswax is scraped off a block of wax with a shuttle screwdriver. Then we roll the sliver of wax between our finger tips to a point on one end. This end of wax is pressed firmly with the screwdriver into the pin hole in the shuttle on top of the pin, and the excess wax is removed. We tap the edges of the pin hole with a small ball-peen hammer and finish the surface with a piece of fine-grit sandpaper.

Now all our shuttle pins stay put, and warp breakouts and other damages are prevented. *Charles S. Bicksler, Lancaster, Pa.*

## Reduce Backwinding Costs

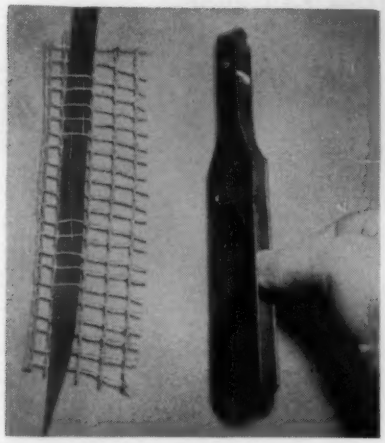



**BARREL OF GAUGE has setscrew and ¼-in. gradations to measure packages on twister creels.**

Our mill has increased running efficiency of twisters by constructing a gauge designed to assure one-size creel packages, since uniform packages greatly reduce the cost of backwinding.

The gauge, made of steel or any other suitable metal, can be adjusted to measure any size of delivery package on Foster winders. The barrel has ¼-in. gradations, and there is an Allen-head setscrew that can be tightened with a wrench to prevent slippage. *James W. Hoyle, Whitnel, N. C.*

## Put Draw Tape in Bagging Right on the Loom



**DROP-WIRE DEVICE for the draw tape in the bagging cloth is set over a sliding feeler-bar holder in the warp stop motion. When the tape breaks, the drop wire falls and the pin engages the teeth of the sliding feeler bar to stop the loom.**

In open-mesh bagging weaves, we put a draw tape in the edge of the woven material right on the loom. Then, when the material is made into finished bags, the draw tape is already in position.

The tape is taken from a roll and runs parallel to the warp ends through the sliding-bar warp stop motion. The tape can be woven into the edge of the cloth many ways, but we usually insert it under five warp ends and over the next five. This arrangement holds the tape securely enough to prevent it from being pulled out and still lets a finished bag be pulled closed easily.

We used to have trouble with worn drop wires and worn sliding feeler-bar holders because the first pick of the tape comes up with a jerk and the drop wire is held against the holder five picks.

We change widths of material often, and each time we had to move the drop wires for the tape. To move the drop wires required mechanical changes.

Now we use a new kind of drop wire for the tape that lets us get looms started sooner at changes. The new device has also eliminated wear to the drop wires and sliding feeler-bar holders.

A 14½-in. length of sheet metal 1 in. wide and $\frac{1}{16}$ in. thick is ground to a semicircle at each end. A $\frac{3}{8}$x$\frac{1}{4}$-in. oval hole is made widthwise in the metal 3½ ins. from each end. The center 6 ins. of the metal is ground convex and then straight to a width of $\frac{3}{8}$ in.

The metal is doubled from the center so that each side forms parallel lines ½ in. apart. A ⅛-in. pin is inserted through two holes bored $\frac{7}{8}$ in. from the doubled-back end, and the pins are peened.

The finished device is used for a drop wire for the tape by dropping the open end over a sliding feeler-bar holder. The tape is run through the stop motion parallel to the warp ends and is placed through the oval hole in the homemade drop wire.

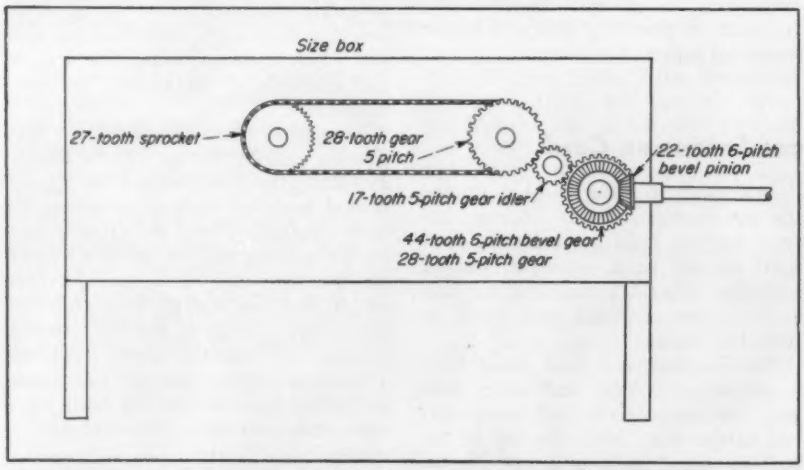
When the tape runs out or breaks, the new drop wire falls and the ⅛-in. pin slips into the teeth of the sliding feeler bar to stop the loom.

When it's necessary to change the position of the tape at style changes, the drop wire is simply lifted off and replaced at another position.

This device is easily and cheaply made, stops wear completely, and has increased loom production.

We made enough drop wires in the machine shop to equip all the looms in the weave room. *J. Warner Holley, Kansas City, Mo.*

## Gear Train Replaces Chain Drive on Size Box




**GEAR TRAIN replaces old sprocket drive on the size box. Now slasher rolls turn smoothly, and fewer repairs are needed.**

The old double-sprocket drive on the size box of our slasher was in constant need of repair. In addition, we had to replace the driving chain every two months. Every time we repaired the drive, the slasher was stopped and production lost.

We have replaced the sprocket drive with a gear train that has run a year and a half without any repairs.

We designed the drive in our machine shop and cut all of the gears ourselves. The gears consist of two bevel gears, a gear idler, and two sprockets.

Now the rolls revolve steadily without any jumping. Since we no longer have periodic breakdowns on the size-box drive, our slasher production is higher. *Willie B. Cobb, Reidsville, N. C.*

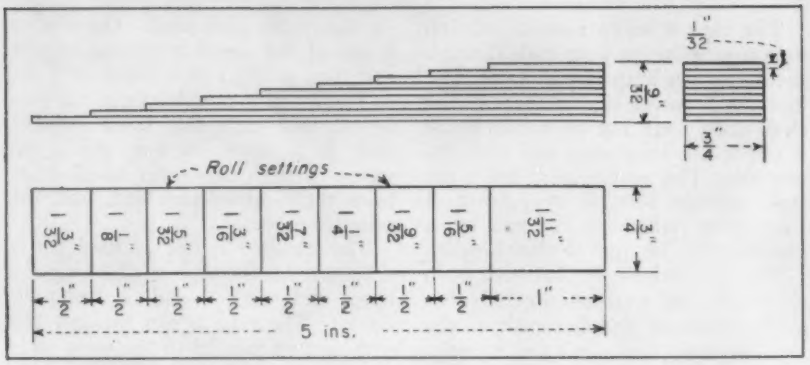
## Lubricate Conduit for Easy Wire Pulling

Wires are often hard to draw through a conduit because of debris or slight irregularities in the conduit. To ease wire drawing, lubricate the inside of the conduit.

Draw a stiff wire through the conduit. Slip over one end of the wire a soft-rubber washer slightly larger than the inside diameter of the conduit. Then put some powdered French chalk into the conduit, and pull the stiff wire through. The washer will spread the chalk along the walls and make wire pulling easy. *W. E. Warner, Essex, England*

## KINKS AND SHORT-CUTS

### Check Roll Settings With Gauge Made From Brass




ROLL-SETTING GAUGE is made from ¾-in. brass strips 1/32 in. thick.

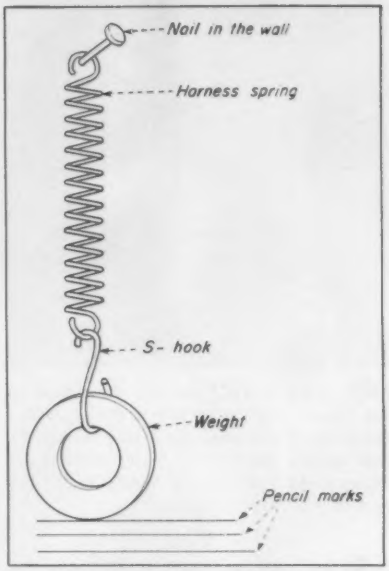
The front-to-middle steel-roll settings are often very critical on long-draft roving frames. It is advisable at times to set these rolls at $\frac{1}{32}$-in. tolerances. All settings, for precision and prevention of roll injury, should be made between the bosses of the rolls with brass-leaf gauges. One of the duties of the supervisor is to check the settings on each type of work.

The gauge shown in the drawing can be carried in the pocket and is handy for a quick, thorough check without using the larger leaf gauges. This gauge is made from ¾-in.-wide strips cut from $\frac{1}{32}$-in.-thick sheet brass. The first strip is made the full 5-in. length, and each succeeding strip is cut ½ in. shorter. The ninth and shortest strip is 1 in. long.

These strips are placed in a vise according to their decreasing lengths. Both sides and one end of the strips are lined up, and a thin layer of solder is run along the edges to hold them securely in place. Any excess solder is removed with a fine file.

The stamped markings on the leaves give the correct center-to-center setting of a 1⅛-in. front roll and 1-in. middle roll when the properly marked leaf is inserted snugly between the bosses of the rolls. Different markings may be used if the roll diameters differ from these described. This gauge, with increments of $\frac{1}{32}$ in. up to 1$\frac{1}{32}$ ins., will give sufficient range for most types of frames. Where less precise or wider settings are desirable, brass strips $\frac{1}{16}$ in. thick can be used to make a checking gauge with an increased range of settings.

### How To Gauge Harness Springs




HARNESS SPRINGS are gauged fast and easily by slipping a weighted S-hook through the bottom end of a spring hung on a wall by a nail. Pencil marks indicate spring strength.

Ordinarily, it does not matter if the pull-down springs for harnesses on dobby-equipped looms are of equal length and strength. However, on special cloth constructions, the length and strength of the springs are very important.

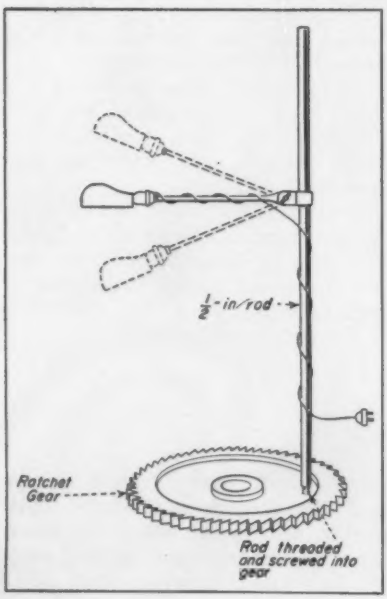
We have developed a simple system for gauging the springs for length and strength. First, we sort and group several hundred springs according to their lengths. Then, we drive a nail in the building wall and hang a weight on the free end of a spring. The weight is strong enough to stretch the spring a few inches, but isn't strong enough to distort the spring. We use a heavy casting for a weight and fasten an S-hook to it so that the hook slips easily into and out of the end of the spring.

Several springs of varying strength are tested, and a pencil mark is made at intervals on the wall at the bottom of the weight for each general strength.

Then all springs of the same length are tested with the weight, and springs stretched nearest to the various pencil marks are grouped together.

Now, the tension on all harnesses is equal. *Charles S. Bicksler, Lancaster, Pa.*

### Shop-Made Floor Lamp Replaces Extension Cord

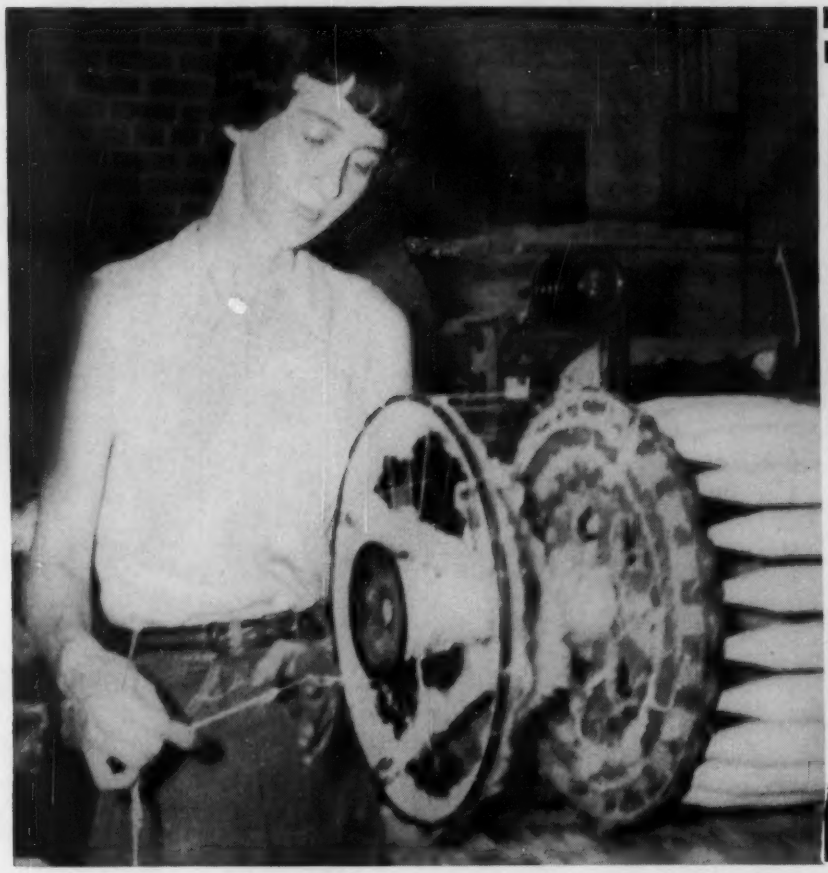



LAMP is made of ratchet-beam gear and ½-in. rod.

We used to have trouble ringing up our harness chains because the fixer had to hold an extension-cord light in one hand while he worked with the other. It was hard for him to see if the chainroll were lined up with the vibrator lever.

We improvised a floor lamp from a ratchet-beam gear and some ½-in. rod. First step was to bolt an upright rod to the gear. Near the top of the rod, we fitted an arm, about 15 ins. long, which can be raised or lowered. A fixture, bulb, and pear shade were attached to the end of the arm. Addition of an extension cord, as long as required, completed the lamp. *G. R. Corrinet, Pittsfield, Mass.*

## Correct Battery Filling Reduces Broken Picks



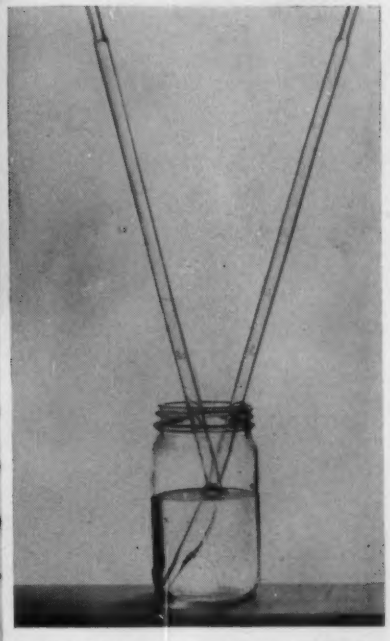
BROKEN PICKS are reduced with this quick operation—the left hand pulls out the slack in the ends while the right hand rewinds the ends around the battery thread holder.

Because of a tight cloth market and the demand for perfect cotton drills and sheetings, everyone in our weave room was asked to find ways to reduce broken picks, one of our major defects.

Many of the broken picks occurred at the filling change. We battery-hands have been able to reduce broken picks at the bobbin transfers by taking the slack out of the yarn between the battery disk and the thread holder at each plugging cycle. After we thread up the battery, we use the index finger of the left hand to pull the slack out of all bobbins in the battery. Then with the right hand, we wrap the ends securely around the thread holder.

We don't know what percentage of broken picks has been reduced, but we are sure this method has reduced them considerably. *Mrs. Hazel Purgason, Reidsville, N. C.*

## How To Distinguish Pyrex From Other Types of Glass



NOW YOU SEE IT—Now you don't. The pipette at the left is Pyrex; the one at the right is made of soft glass. The solution is trichloroethylene.

Here's a new way to sort Pyrex glass tubing, pipettes, or other glass vessels from soft or quartz glass.

Immerse in trichloroethylene. The refractive index of Pyrex is so close to that of trichloroethylene that the portion of the Pyrex immersed becomes invisible. This test will help avoid the breakage that usually occurs in attempting to fuse unlike glasses in the laoratory.

It is also possible to get the same results by mixing 59 mls. of carbon tetrachloride with 41 mls. of benzene. *J. Daniel Bode, Fisher Scientific Co., Pittsburgh, Pa.*

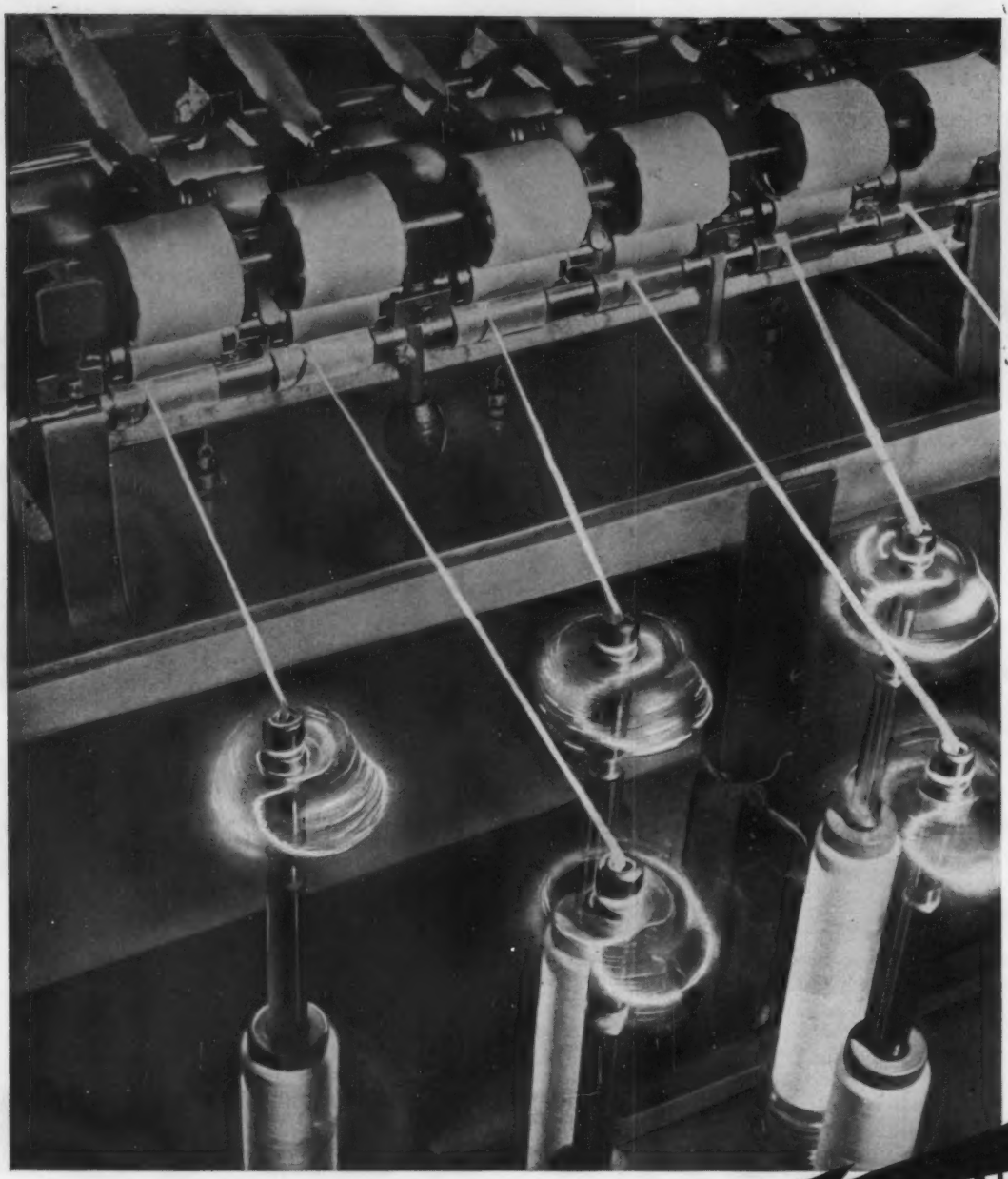
## Filter Dye Solutions for More-Even Dyeing

Soluble vat dyes are usually fed into the dye pad by gravity through a piping system that ends in a perforated pipe extending the full width of the pad box. When very small pad boxes are used for this type of dyeing, the space between pad roll, dye-supply pipe, and pad box is so small that it is difficult to see if all the perforations in the pipe are open and able to deliver dye.

A steady, even flow of dye must be maintained to avoid shaded goods. Salts dumped directly from bags into the tank often carry with them bits of paper and jute fiber that accumulate in the perforated pipe, usually in one end, and cause uneven dyeing.

To remedy this condition, we broke the line from tank to pad and made a funnel big enough to take a piece of filter cloth approximately ½-yd. square. This filter was installed below eye level so that the operator could see it at all times and replace it when necessary.

With this improvement, the dye-supply pipe perforations remain open and one source of trouble has been eliminated.



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| T-14 | T-15 | T-16 | T-17 | T-18 | T-19 | T-20 | T-21 | T-22 | T-23 | T-24 | T-25 | T-26 |
| T-27 | T-28 | T-29 | T-30 | T-31 | T-32 | T-33 | T-34 | T-35 | T-36 | T-37 | T-38 | T-39 |
| T-40 | T-41 | T-42 | T-43 | T-44 | T-45 | T-46 | T-47 | T-48 | T-49 | T-50 | T-51 | T-52 |
| T-53 | T-54 | T-55 | T-56 | T-57 | T-58 | T-59 | T-60 | T-61 | T-62 | T-63 | T-64 | T-65 |
| T-66 | T-67 | T-68 | T-69 | T-70 | T-71 | T-72 | T-73 | T-74 | T-75 | T-76 | T-77 | T-78 |
| T-79 | T-80 | T-81 | T-82 | T-83 | T-84 | T-85 | T-86 | T-87 | T-88 | T-89 | T-90 | T-91 |
| T-92 | T-93 | T-94 | T-95 | T-96 | T-97 | T-98 | | | | | | |

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| F-14 | F-15 | F-16 | F-17 | F-18 | F-19 | F-20 | F-21 | F-22 | F-23 | F-24 | F-25 | F-26 |
| F-27 | F-28 | F-29 | F-30 | F-31 | F-32 | F-33 | F-34 | F-35 | F-36 | F-37 | F-38 | F-39 |
| F-40 | F-41 | F-42 | F-43 | F-44 | F-45 | F-46 | F-47 | F-48 | F-49 | F-50 | | |

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. APRIL, 1955

# *Outstanding* TRADE LITERATURE *Free for the Asking*

**NO REPEATS . . . Listed here for April are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service Card, as described on the preceding page.**

## TEXTILE MACHINERY

**Automatic blending system**—For cotton, synthetics, wool. Proportions fiber blends to produce yarn within a maximum blend variation of ±1%. W. D. Dodenhoff Co., Inc. (F-1)

**Selvage trimmer**—For all cloths from sheer to heavy duck. 150 yds. per min. Takes up to 36-in.-dia. rolls 110 ins. wide. Hermas Machine Co. (F-2)

**Cutting and shredding machines**—For rayon, silk, or cotton thread waste. Exact cutting of roving or sliver into staple. Taylor-Stiles & Co. (F-3)

**Ring twister**—With automatic stop motion for each end in the ply. For taper-top package, double-taper package, or straight-wind package. Bulletin 10A. Universal Winding Co. (F-4)

**Twist setter**—No moving parts except ½-hp. pump. 3x3½-ft. floor space. 1,000 lbs. yarn set for 10 to 20 c. 4 high-pressure sprays. Adds 2 to 8% regain. 3,500 lbs. per hr. Seydel-Woolley & Co. (F-5)

**Roto-Coner**—Open-wind cones and tubes for knitting, warping, twisting, dyeing. For cotton, wool, spun rayon and nylon, worsted, and blends. Bulletin 144-A. Universal Winding Co. (F-6)

**Sewing machines**—For women's wear. Machines stitch type, stitch range, sewing capacity. Special attachments. 30 specially designed machines. Bulletin 265. Union Special Machine Co. (F-7)

**Wet-finishing machinery** — Bleaching ranges, pneumatic mangles, washers, dyeing machines, saturators, padders, and steamers. Rubber-covered squeeze rolls, wood rolls, and stainless-steel rolls. Bulletin 44. Rodney Hunt Machine Co. (F-8)

**Continuous washer**—Varispeed multi-tub machine for washing or neutralizing woolens, worsteds, or blends. Fabric kept tensionless between tubs. Riggs & Lombard, Inc. (F-9)

**Cloth-folding machine**—Designed for almost any depth of pile by delivering goods to a pallet from under front jaw. Handles long cuts. Hall & Jansson Co. (F-10)

## AUXILIARY EQUIPMENT

**Microscope**—With built-in illuminating system and projection elements that render image on 8-in. ground-glass screen. For textile fibers. William J. Hacker & Co., Inc. (F-11)

**Colorimeter**—Measures slight color differences. Establishes permanent reproducible color standards. Matches difficult colors. Bulletin FS246, Fisher Scientific Co. (F-12)

**Fractional-hp. varispeed motor drive**—With 14-turn hand wheel control. Speeds from 3 to 4,660 rpm. ¼- to ¾-hp. motors. Bulletin No. M543. Reeves Pulley Co. (F-13)

**Hand tachometer**—With stop button. 3-in.-dia. dial. Speed range 50 to 5,000 rpm. Two speed ranges quickly selected. Jones Motorola Corp. (F-14)

**Static bars**—3 types. Metal-encased bar in various diameters and lengths. Channel bars for dirty applications. Shockless bars for dangerous positions. Simco Co. (F-15)

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**Slasher speed increased**—With draining and air-venting system installed on each cylinder of 7-cylinder slasher. Sarco Co., Inc. **(F-16)**

**Automatic marker** — For marking flaws on cloth selvage. Marking thread is drawn through selvage, knotted, and cut simultaneously. Stellite American Corp. **(F-17)**

**Twist tester**—For all yarns. With 110-v. a.c.-d.c. motor. Distance between yarn clamps adjustable from 1 to 20 ins. United States Testing Co., Inc. **(F-18)**

**Air conditioning**—And humidification systems. Humiduct unit, centrispray, central-station systems. Centrifugal humidifiers, pneumatic atomizers. Bahnson Co. **(F-19)**

**Drafting system**—For high draft. With No-oil cap bars and saddles. Hardened-steel top and bottom rolls. Fully adjustable stands. Roberts Co. **(F-20)**

## SUPPLIES AND CHEMICALS

**Textile lubricants**—For slashers, calenders, carding, spinning, dryers, printing machines, top rolls, comb boxes, twister rings, and looms. Georgia-Carolina Oil Co. **(F-21)**

**Screws**—Socket-head capscrews, self-locking setscrews, shoulder screws, flat-head socket capscrews, and button-head socket screws. Standard Pressed Steel Co. **(F-22)**

**Lap-preventing brushes**—For automatic spoolers. Attached to lint guard to touch drum at slight angle. Atlanta Brush Co. **(F-23)**

**Vulcanized-fibre products** — Shuttle-wearing surfaces, loom stops, box linings, picker sticks, lacing combs, sliver cans, mill boxes, and trucks. Spaulding Fibre Co., Inc. **(F-24)**

**Spindle oil**—High film strength and lubricity. High viscosity index. Low stable pour test. Freedom from deposits. High rust protection. Bulletin 85. Pure Oil Co. **(F-25)**

**Synthetic resins** — Plasticizers, and nonionic surface-active agents for textile processing. Hercules Powder Co., Inc. **(F-26)**

**Fatty acids**—Distilled stearic, oleic, coconut, cotton-seed, soya, and palm fatty acids. Glycerine and hydrogenated tallow fatty acids. A. Gross & Co. **(F-27)**

**Pesticide emulsifiers**—Rapid dispersion when diluted with water, easy to mix, emulsion stability, and uniform performance. Nopco Chemical Co. **(F-28)**

**Fast yellow dyestuff**—For nylon, acetate, Dacron, Orlon, Dynel, and Acrilan. Improved affinity for acetate at 160° F. Very suitable for piece goods in open jigs. General Dyestuff Corp. **(F-29)**

**Industrial oils**—Wool processing oils, defoamers, esters, tallow, lard oils,


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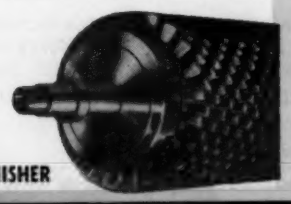

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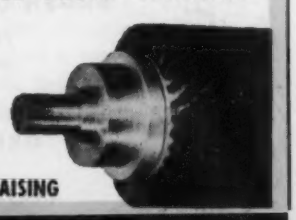

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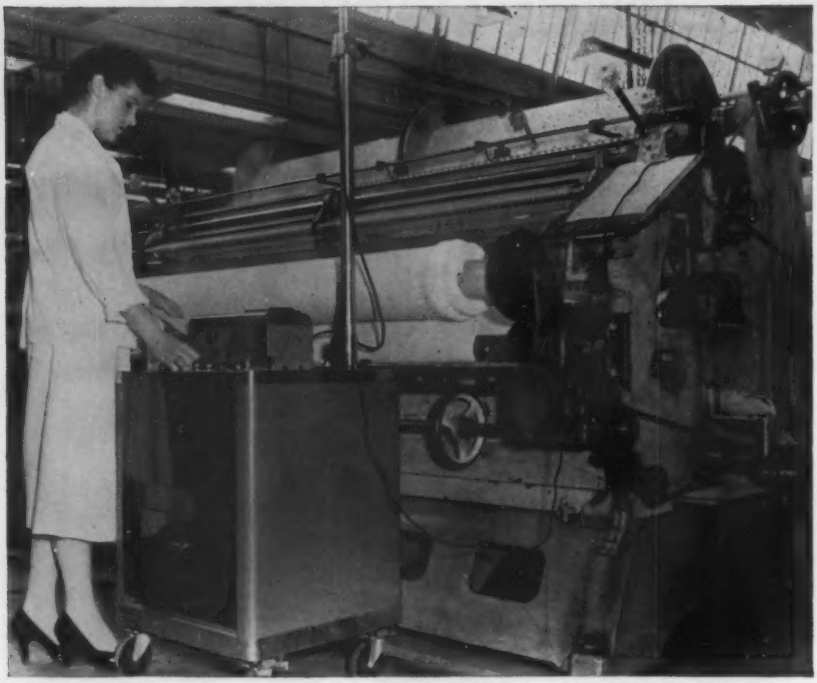

## Brush Tension Analyzer helps American Viscose improve textile processing

This test setup on a tricot knitting machine at Avisco's Textile Research Dept. utilizes a Brush Analyzer to measure tension on viscose dull yarn. The Analyzer measures and permanently records on graph paper both static and dynamic tensions from 1/10 to 400 grams in filamentary materials.

Mounted on casters, the unit can be used in research, or easily rolled to various production machines. It improves quality control and reduces costs by indicating trouble spots due to improper tension. For information on how Brush Textile Instruments can help *you*, contact our Southeastern Office or write Brush Electronics Company, Department Q-4, 3405 Perkins Ave., Cleveland 14, Ohio.

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stearines, hydrogenated and sulfonated products, and fatty acids. Swift & Co. (F-30)

### MAINTENANCE AND ENGINEERING

**Small boilers**—For steam or hot water. 50 to 80 hp. 15- to 150-lb. steam. 30-lb. hot water. Four-pass fire-tube construction. Cleaver Brooks Co. (F-31)

**Demisters**—Clean separation between liquid and vapor in vacuum towers, distillation equipment, and steam drums. Bulletin 16. Otto H. York Co., Inc. (F-32)

**Hydroline pumps**—Vertical encased close-coupled pumps for handling hydrocarbons, hot and cold water, mild acids, basic and salt solutions. Bulletin B-1700. Food Machinery & Chemical Corp. (F-33)

**Electric hygrometer**—For high-precision humidity measurement and control. Records relative humidity from 1.6 to 99%. Bulletin 2194. American Instrument Co., Inc. (F-34)

**Multistage centrifugal blowers**—And exhausters. Where air pressure from 1 to 9 psi. or vacuum from 2 to 12 ins. mercury are required. Bulletin A-932. U. S. Hoffman Machinery Corp. (F-35)

**Protective coatings** — Nine different coatings. Base formulation, temperature resistance, abrasion resistance, chemical properties, adhesion, application. Catalog C-150. Ceilcote Co. (F-36)

**Electronic relay**—For liquid-level control. For gauging operations or for positioning. Open or closed types with internal or remote sensitivity adjusters. Bulletin R-4, 1. Machinery Electrification, Inc. (F-37)

**Tubular stainless steel**—How to hand-thread. Speed limits, cutting oil, difference in dies, die-stock selection. TDC 147. Babcock & Wilcox Co. (F-38)

**Mercury clutches**—Automatic power-transmission control for electric motors. Protects motor. Permits inexpensive motors. Bulletin 218-A. Automatic Steel Products, Inc. (F-39)

**Bushings and hubs**—With Taperlock. For sheaves, pulleys, flywheels, couplings, sprockets, and impellers. A-628A. Dodge Mfg. Corp. (F-40)

**Plant-maintenance cleaning**—Air-conditioning units, floors, compressors, furnaces, light fixtures, transformers, windows, painted surfaces. Oakite Products, Inc. F-41)

**Control valve** — 2-in.-high four-way valve has poppet-type seals. Bottom-ported base plate permits body removal without disturbing piping. Bulletin 307. Ross Operating Valve Co. (F-42)

**Industrial control counters**—Preset to apply control after any desired number

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STEEL HEDDLE MFG., CO., has the engineering know-how and facilities to produce any reed or comb no matter how special your needs may be. In addition the largest stock of dent wire and spring wire insures quick delivery.

STEEL HEDDLE MFG. CO., is the originator of Ultra (100% Stainless Steel) Broad Silk Reeds, furnished with flat bands, as illustrated, or tubes over bands. Hard Chrome plating is available and recommended for maximum wear resistance.

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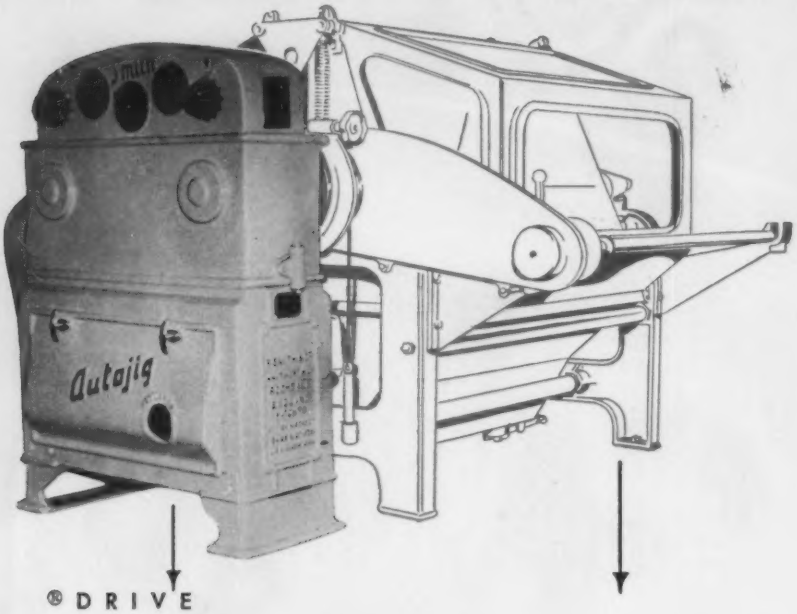
# installations prove

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Adding a Smith Patented Autojig **Drive** to your present dyejig will at low cost provide:

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of counts from 1 to 1,000,000. Potter Instrument Co. **(F-43)**

**Syphon scoop**—For draining cylinder dryers. Removes condensate from revolving dryers as fast as it is formed. Bulletin 266. Armstrong Machine Works. **(F-44)**

**V-Belt drives**—How to spot trouble. Belt tension sheave wear. Excess oil. Groove depths and widths. V-1400-M39. Worthington Corp. **(F-45)**

**Filters**—For microscopic clarification of industrial liquids and gases. With honeycomb filter tubes. Commercial Filters Corp. **(F-46)**

**Industrial flooring**—For as low as 18¢ per sq. ft. Protects and waterproofs wood and concrete, new or old subfloor. Easy on feet. Duratred, Inc. **(F-47)**

**Industrial lighting**—Open-type or vapor-tight luminaires for textile mills. Luminaires for 48-in. slimline and general-line lamps. Sec. 1D. Miller Co. **(F-48)**

**Tar-base coat**—Protects metal, masonry, stone, and brick against acid, alkaline, and extreme moisture conditions. Pittsburgh Coke & Chemical Co. **(F-49)**

**Gear motors**—Integral power units with single (780 to 280 rpm.) double (230 to 45 rpm.) or triple (37 to 7.5 rpm.) speed reduction. Elliot Co. **(F-50)**

## ROUND TABLE

CONTINUED FROM PAGE 10

If the standard production of each machine is maintained, the direct labor cost will take care of itself. Small fractional curtailments do not always permit the reduction of indirect labor costs in proportion to the number of machines stopped. This increases the indirect-labor-cost ratio and increases the labor cost per unit.

Proper control of production balance between processes will prevent many partial curtailments. When larger curtailments are found necessary, it is more profitable to stop a large number of machines for a short time than to stop a smaller number for a longer period. The elimination of a proportional part of the indirect labor may be possible, and power may be saved by shutting down an entire section.

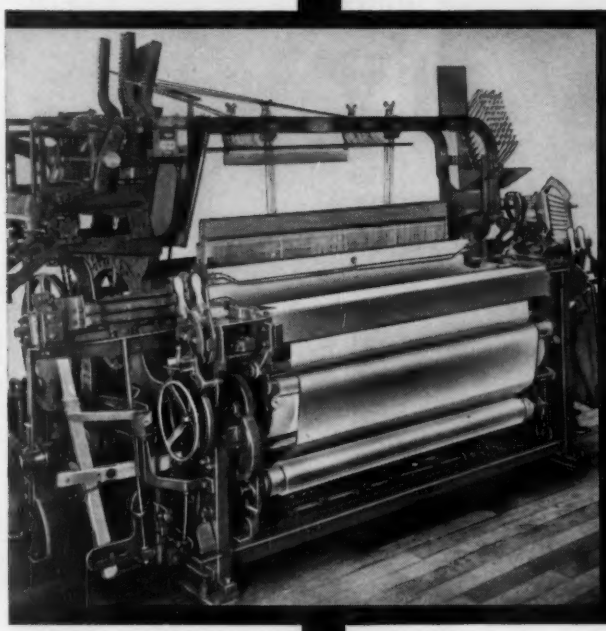
S.M.C.

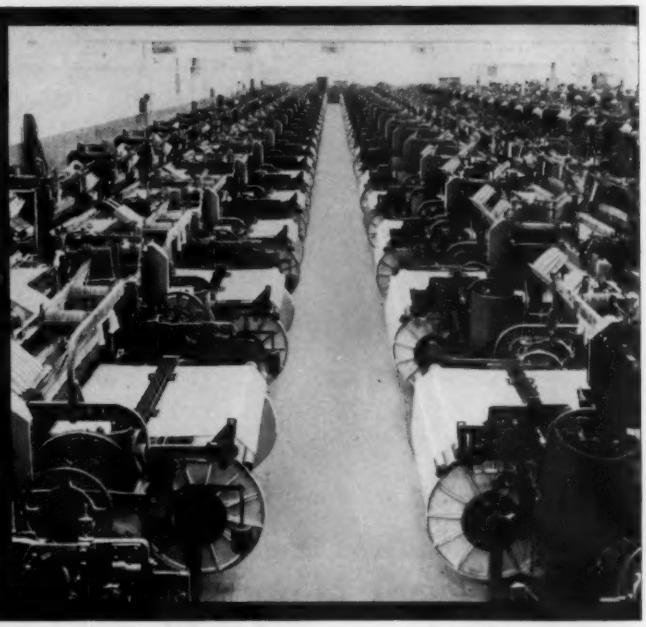
Newburyport, Mass.

# LOOMS

number five of a series depicting

## MORE AND BETTER TEXTILE PRODUCTION WITH HYATTS





Crompton and Knowles S-6 Loom in which Hyatt Barrel and Hy-Load Bearings are employed on the crankshaft, bottomshaft and rockershaft.

Installation of Crompton and Knowles W-3A Looms at Robbins Mills, Raeford, N. C., where Hyatt Roller Bearings are applied in principal loom positions.

***Product protection,*** **assuring more "firsts" and fewer "seconds," is one of the prime reasons why Hyatt Roller Bearings are first choice of leading loom manufacturers and operators. The cloth is protected from spattering lubricant because all Hyatt housings are securely sealed.**

**Moreover, Hyatt Roller Bearings reduce friction so that looms can easily be turned by hand whenever necessary. This means considerably less starting power requirements than with old-fashioned sleeve bearings. With so much friction and wear eliminated, looms stay in adjustment far longer, too—another reason why you're always sure of *more and better textile production with Hyatts!* For further details on the profitable application of Hyatt Roller Bearings to textile machinery, request Bulletin T-54 from Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.**

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Present Many Opportunities to REDUCE Costs

Doors that are opened and closed *automatically* by Stanley Magic Door Controls save man hours and traffic flows more smoothly and faster. They save wear and tear on plant mobile equipment as well as on the doors themselves. Heat and humidity losses are minimized. Employees are happier and more efficient . . . and every plant finds plus benefits from every different application on new or existing doors.

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## FLAME RESISTANCE

CONTINUED FROM PAGE 170

vided with a sealed motor-driven stirrer of glass or stainless steel, a reflux condenser, a thermometer, and an inlet for adding reagents. A variable-speed motor is provided for stirring. A jacket surrounds the flask to supply steam or hot water for heating and cold water for cooling.

The bromoform and triallyl phosphate listed in the formula are added to the flask and stirred until they become homogeneous. If another emulsifier besides polyvinyl alcohol is used, it is added to the mixture of bromoform and triallyl phosphate.

The polyvinyl alcohol is dissolved in part of the water specified in the formula to make a 5% solution, and this solution is added with constant stirring to the flask. The sodium bicarbonate and all but 250 mls. of the water are added. The mixture is heated as rapidly as possible to 82 to 83° C., and the postassium persulfate is added through a powder funnel. The remaining 250 mls. of water is used to wash the powder into the flash. Stirring proceeds for 2 hrs. at a rate sufficient to prevent settling.

The reaction is exothermic for 60 to 90 mins., after the persulfate is added, and the emulsion is kept below 85° C. by removing the heat and partially immersing the flask in cool water. However, the temperature must be kept to at least 80° C.

After 2 hrs., the mixture is cooled as rapidly as possible to minimize hydrolysis of the phosphate. The pH should be 7.2 to 7.5.

## FIBER LENGTH

CONTINUED FROM PAGE 119

### 3. SL-1H vs SL-Bale

The length uniformity of the test cotton was deliberately ruined by eight passes through a carding beater. In this instance, one bale of cotton with a staple length of about 1 1/32 ins. and a Micronaire reading of 4.9 was divided up into several parts, one portion of which was processed through a Kirschner beater at the Saco-Lowell Shops. This beater was operated at a speed of 1,040 rpm. with the blades set at 1/32 in. from the beater bars. Fiber-breakage index for the SL-1H was 59% as compared with 30% for the SL-Bale. The conventional group-fiber properties and single-fiber properties indicated rather large differences between the samples.

Portions of the original unbeaten bale and of the beaten cotton were spun into 22s, 36s, and 50s carded

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Tackiness?
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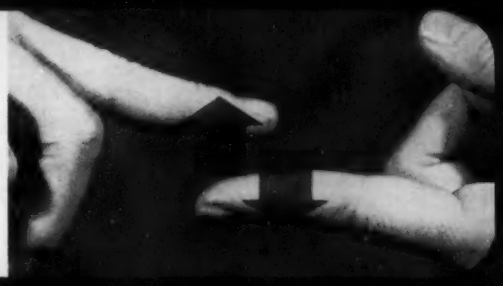

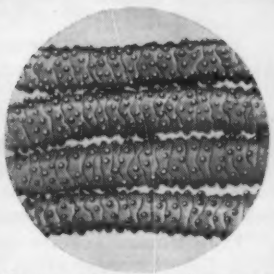

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yarns. The beaten cotton spun very poorly, and the yarns were extremely weak and uneven. The unbeaten cotton processed normally.

### 4. Karnak vs. Amsak

Combed Karnak and Amsak samples were taken from identical production lines in American Thread Co. Conventional length-array determinations of the cotton before combing indicated they were of equal length. After combing, the Amsak cotton had fewer short fibers and more long ones than the Karnak sample. Number-length distributions confirmed this difference.

The breakage indices were 26% for the Karnak and 20% for the Amsak. Single-fiber mechanical properties for these two cottons were very nearly the same. The combed-roving properties indicate that they fall into the same pattern outlined in the foregoing. The Karnak roving was only half as strong and much less uniform.

---

## EXTRA CYLINDER ON CARDS

CONTINUED FROM PAGE 117

as good mote removal and total lint saving as is given by the waste-removal cylinder. In the lickerin waste, the reduction of lint loss is greater than that obtained with the waste cylinder. Also, the use of air pressure only in the mote box does not seem to give quite as many neps as does the waste cylinder. On the other hand, addition of air pressure alone does not reduce the amount of large trash reaching the flats.

Thus, it is seen that a lint saving can be had by use of either the waste-removal cylinder or by increased pressure in the mote box.

Spinning tests were run on the final yarn made from two grades of cotton. Several effects of using the waste-removal cylinder were evident:

1. At normal lickerin speed and at two different production rates, yarn from the first cotton sample showed no appreciable change in yarn strength, evenness, or grade due to use of the waste cylinder.
2. At normal mote-box pressure and lickerin speed, the use of the waste cylinder did not impair yarn made from the second sample.
3. At higher mote-box pressure and with the lickerin running at normal speed, the waste cylinder seemed to slightly reduce yarn strength, grade, and evenness.
4. At both air pressures and high lickerin speed, use of the waste cylinder gave a small reduction in strength, grade, and evenness.

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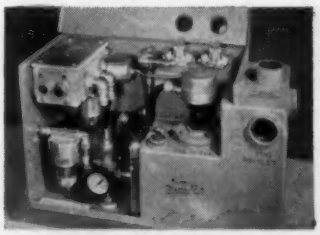

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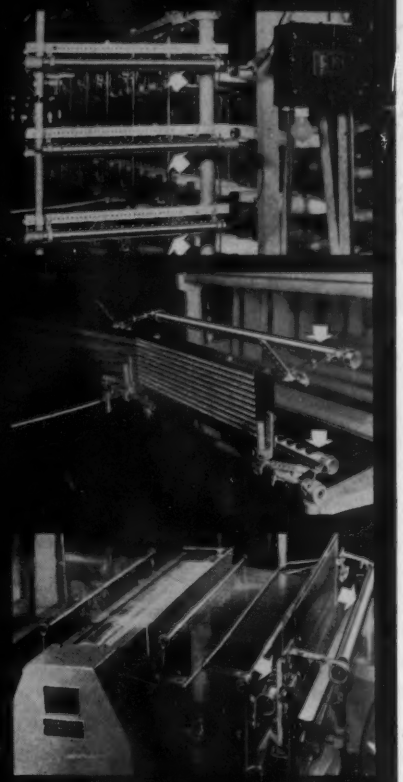

● **Every application of the SIMCO "*Midget*" on a creel or warper to date has given outstanding results—a perfect, evenly tensioned, ridgeless warp beam. It is the most efficient neutralizer for high speed operations . . . yet it is lowest in cost! Write for full information today.**

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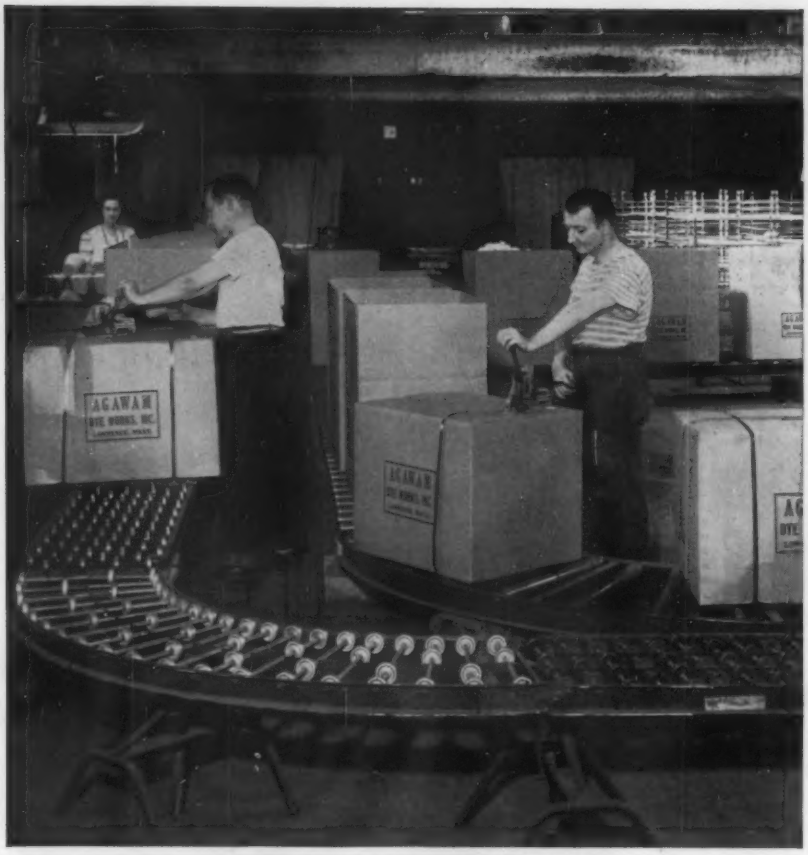

The Model AC Seal-Feed Strapping Machine in use here is one of a complete line of Signode tools widely used in the textile industry.

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# BOOK REVIEWS

**WORSTED DRAWING,** by H. Walker; The Textile Institute, Blackfriars St., Manchester, England; 239 pages, $2.80.

Mr. Walker is at present manager of a spinning plant making worsted and woolen yarns and was formerly a textile-school lecturer.

The book has been written with the needs of both the student and the overseer in mind and is based on the author's many years of teaching the subject as well as his own practical mill experience.

Sections are on: open drawing, gilling, the spindle gill box, drawing boxes, cone drawing, French and Continental drawing, Anglo-Continental drawing, drawing developments, and stop motions.

**THE WAY TO WRITE,** by Rudolph Flesch and A. H. Lass; McGraw-Hill Book Co., 330 W. 42nd St., New York, N. Y.; 464 pages, $2.68.

Anyone in business will find this book to be of tremendous help in putting thoughts and ideas into written form. The first part of the book deals with attitudes toward writing, collecting information, organizing material, writing reports, letter writing, attaining clarity, and choosing effective words. The second part is a reference handbook for grammar, sentence structure, usage, spelling, punctuation, capitalization, and letter form.

**THE CHEMISTRY AND CHEMICAL TECHNOLOGY OF COTTON,** Edited by Kyle Ward, Jr.; Interscience Publishers, Inc., 250 Fifth Ave., New York 1, N. Y.; 782 pages, $20.

This book is a source of information on the chemical technology of cotton textiles, and it is of particular value for cotton textile men who need a refresher in chemistry and for chemists who want to learn about cotton textiles. Chapters on sizing, bleaching, dyeing, printing, and the various fabric treatments are covered by au-

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thorities in each field from a general-survey standpoint.

**WOOL SHRINKAGE AND ITS PREVENTION,** by R. W. Moncrief; Chemical Publishing Co., 212 Fifth Ave., New York, N. Y.; 578 pages, $10.50.

The fundamentals of wool fiber structure, shrink resistance, and the methods used for the prevention of wool shrinkage are covered in detail. Also, one section treats the methods of determining the damage caused by the various processes and tests for their efficiency.

Features of the book are a list of 500 references, over 100 tables, and a detailed index.

**PLANT AND PROCESS VENTILATION,** by W. C. L. Hemeon; The Industrial Press, 93 Worth St., New York 13, N. Y.; 448 pages, $9.

Data are presented to provide the engineer with ventilation design factors for any situation in a plant. A system of classification that covers all ventilation situations is presented.

Also treated is the problem of ventilating large mill buildings that house heat processes. A discussion of the behavior of roof ventilators and air currents within the building enables the plant engineer to analyze a particular problem and to explain the behavior of ventilation currents.

**ELEMENTS OF MACHINE DESIGN,** By Emanual Rosenthal; McGraw-Hill Publishing Co., 330 W. 42nd St., New York,; 300 pages, $5.50.

The theory of machine design in this book has been simplified to meet the needs of readers without specific training in the subject. The first section presents a survey of the metals of industry and their properties, problems in applied mechanics, a discussion of power transmission, and design stresses for dynamic loadings. The main portion of the book covers the design of principal machine parts.

---

## YARN MERCERIZER

CONTINUED FROM PAGE 115

A second hot wash follows, with water at 160° F. and 6% caustic. The box is similar to the first hot-wash box, and the yarn makes the same number of passes through the water. The overflow from the second hot-wash box flows into the first.

The yarn then receives a warm wash

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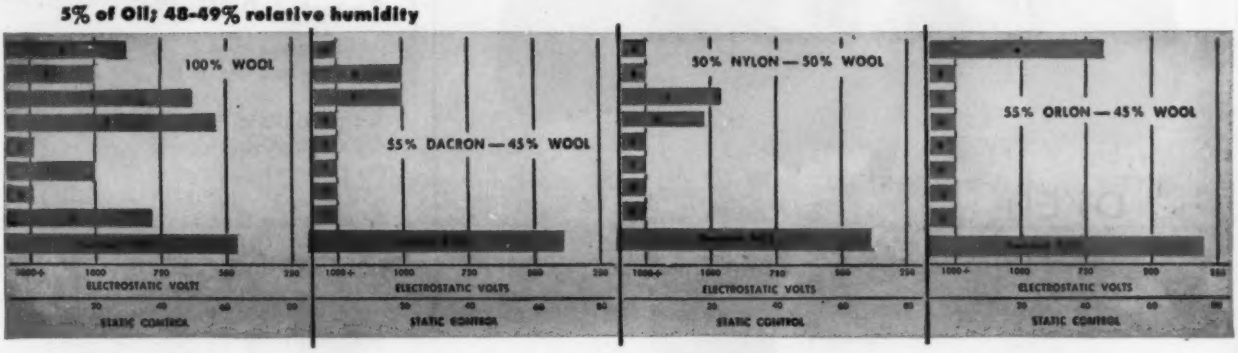


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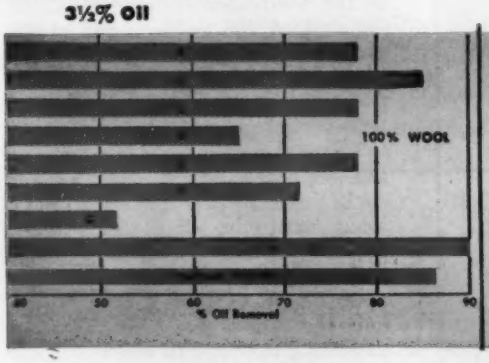


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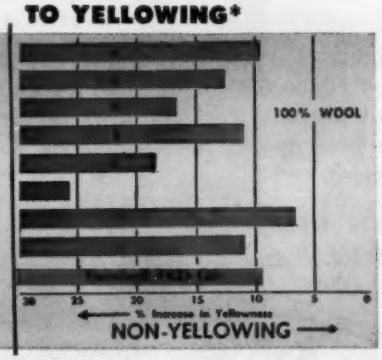


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in water at a temperature of 120 to 130° F. Next in the line is the sour box where sulfur dioxide is fed from a cylinder into the water through a micro-metal diffuser. The water is circulated and sprayed over the diffuser, and sulfurous acid is formed. In subsequent washes, the acid is removed from the yarn.

The yarn then passes through a sour-wash box containing water at about 140° F. to remove the acid. A hot wash follows, and then another; the overflow from the latter runs into the former.

The yarn then goes through the finish box, which is used for special finishes. A tank is available for recirculating the finishing liquor. If no finish is applied, the box is used for a hot wash. The yarn is split out when it leaves the finishing box, and it goes into the dryer.

### Yarn in Dryer Protected During Stops

The dryer, which heats the yarn by steam-heated air, is divided into three sections. Each section has a variable temperature control and a variable fan control. For coarse yarns the section temperatures are: (1) 290°, (2) 250 to 270°, (3) 170° F. The temperatures for fine threads are (1) 230°, (2) 200°, (3) 170 to 180° F., or sometimes unheated.

In the oven, manufactured by Andrews & Goodrich, the first section temperature is set by hand, while the temperatures of the second and third sections are controlled automatically by the Minneapolis-Honeywell Moist-O-Graph at the delivery end of the oven. While the temperature controls in the first section are not too sensitive, the second- and third-section controls get progressively finer.

When the dryer stops for some reason, the heat is expelled and the oven cools; the mercerizer cannot be started again until the dryer reaches the proper operating temperature. There is also enough yarn in the dryer at any given time to run for 5 mins. Therefore, the yarn is not overdried when there is a stoppage in the mercerizer line.

The yarn is split out after leaving the oven, and the ball warps enter snakers that lay the yarn down into boxes.

### Tension Controlled at 6 Points

The mercerizer proper has variable-speed drives that break the unit into six sections, and speeds can be varied from section to section. The drives, manufactured by Century Electric Co., are of the d.c. variable-frequency type.

CONTINUED ON PAGE 204

# starches

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| | Fine Cottons | | Fibersize, Clearfilm |
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| | Rapidogen | | Flotex, RW7, Ambertex, Kojel |
| | Napthols | | Flotex, RW7 |
| | Indigisols | | Flotex |
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| | White and Color Discharge | | Ambertex, Kojel |
| | Plisse Printing | | Nadex 360 |
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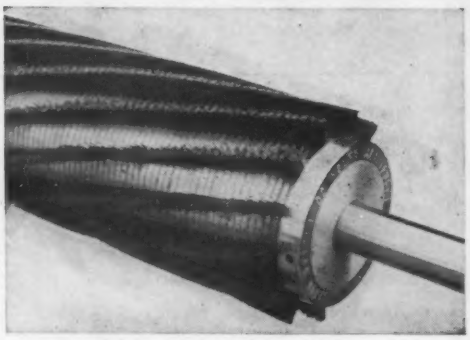

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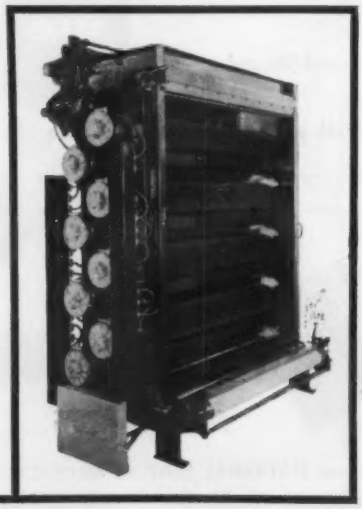

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The mercerizer is driven by six variable-frequency a.c. motors supplied by a variable-frequency generator driven by a d.c. motor. A Tel instrument panel contains electric controls that permit fine adjustments to the variable-speed drives.

The six drive sections divide the mercerizer as follows:

1. First boil-out, second boil-out, third boil-out, first cold wash
2. First caustic
3. First hot wash, second cold wash
4. Second caustic
5. Second hot wash, first warm wash
6. Sour box, sour wash, two hot-wash boxes, finish box

The dryer and the snaker are each driven by variable-speed d.c. motors, which are electrically interlocked with the mercerizer drives.

Potentiometers on the panel board control the speed of each section; and dials show the percentage increase or decrease of speed compared to the second section, which is used as the base and reads in yards per minute.

Because of the accuracy of the variable drives, Coats & Clark, by the turn of a few rheostats, can get the degree of mercerization desired; and different types of thread can be processed with results duplicated from day to day by reference to previous runs.

Another important factor is the control of yield imparted by the variable drives. Referring to the dials on the panel, the operator immediately knows what percentage of stretch or shrinkage is taking place at each step; and figuring the net result is a simple process.

Ammeters on the panel board indicate the current flowing through each drive, and they point out overloads caused by such things as worn bearings or broken yarn wrapped around a roll. Controls other than those on the panel board were made by Square D Co.

### Wash Water Evaporated To 40% Caustic

The caustic recovery system processes the liquid obtained in the hot washes following the caustic treatment. Wash water with 10% NaOH is pumped into the third stage of a triple-stage caustic evaporator. In the three stages, the caustic increases in concentration from 11.92% to 16.5%, and finally to 40%. Steam starts at the opposite end, at the first stage, at 337° F.; and after evaporating the caustic liquors in the three stages, the steam counterflows with cool water in a condenser, producing up to 300 gals. per min. of hot process water. The

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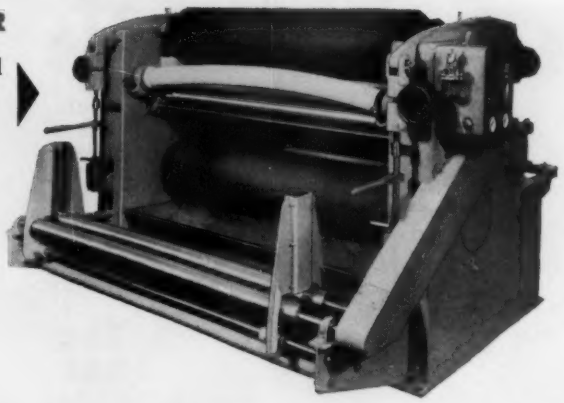
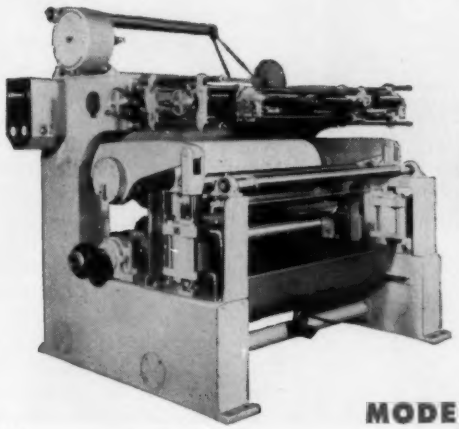
***...FOR A WIDE RANGE OF FINISHING PROCESSES IN THE SYNTHETIC, COTTON, AND WOOLEN AND WORSTED INDUSTRIES***

## MODEL A 3-ROLL PADDER

Well-designed, sturdily built. Available with 14″ and 18″ diameter rolls. All three rolls rubber-covered or two rolls rubber-covered and one stainless steel. Roll face length to suit customer's requirements. Pressure rolls equipped with direct reading dynamometers indicating pressure at each end of each nip. Stainless steel pad tank having stainless steel immersion rolls...easily accessible for cleaning.



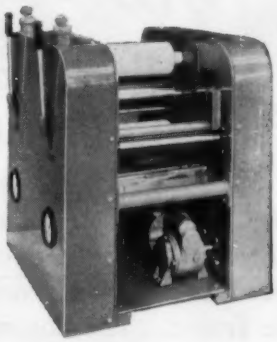


## MODEL O 2-ROLL PADDER

Economical to operate; little or no maintenance required. Available with 16″ and 18″ diameter rolls. Both rolls can be rubber-covered or one rubber-covered and one stainless steel. Pneumatic pressure up to 400 lbs. per linear inch. Roll face length to suit customer's requirements. Single or double strand operating provisions with or without guiders.

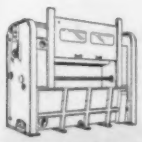
## MODEL N 3-ROLL LABORATORY PADDER

A versatile unit for all laboratories. Three rolls rubber-covered, or two rubber-covered and one stainless steel. Roll diameter 4″; roll face length 10″. Pressure-pneumatic or self-contained hydraulic system up to 200 lbs. per linear inch roll pressure. Fully equipped with pad tank having immersion provisions, drive unit, and controls.

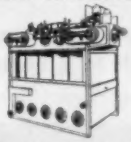


*The Wiesner- Rapp technical staff will be glad to discuss your processing needs.*

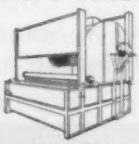
**OTHER WIESNER-RAPP MACHINES**



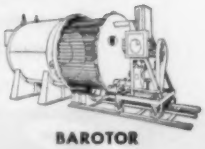
TIGHT-STRAND WASHER



MULTI-STAGE WASHER



DYE BECK



BAROTOR

THE WIESNER-RAPP CO., INC. Buffalo, New York

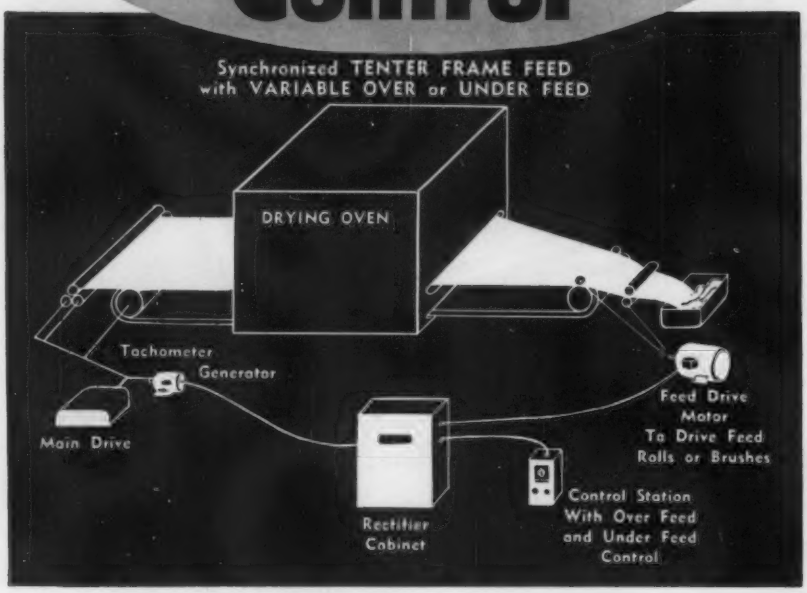
**THE WIESNER-RAPP CO., INC.**

**1610 SENECA ST., BUFFALO 10, N. Y.**

***Manufacturers of Wet-Finishing and Dyeing Machinery***

Servospeed

# Tenter Frame Feed Tension Control


Synchronized TENTER FRAME FEED
with VARIABLE OVER or UNDER FEED
DRYING OVEN
Tachometer Generator
Main Drive
Rectifier Cabinet
Control Station With Over Feed and Under Feed Control
Feed Drive Motor To Drive Feed Rolls or Brushes

## Here's HOW IT WORKS ...for the Textile Finishing Industry

The Tachometer generator monitors the tenter frame speed and maintains the Servospeed drive at a synchronized speed with the frame. The control station allows the Servospeed motor to over or underdrive the feed rolls or brushes to achieve desired tension.

**These and other models of electronic motor speed control systems available from 1/50th to 3 horsepower.**

WRITE

Servospeed
DIV. of ELECTRO DEVICES, Inc
4 Godwin Ave. Paterson, N. J.


steam condensate is returned to the baths for make-up needs.

The recovery system, made by Zaremba Co., is set up to handle 50 gals. per min. of wash water with 10% caustic. When fully processed, the liquor contains 40% caustic. To remove impurities, 20 to 30% of the 40% solution is dialized to 11%, and the dialized liquor is put back into the weak-liquor storage.

Storage tanks hold 60,000 gals. of 40% caustic, 60,000 gals. of wash water with 10% caustic, and 60,000 gals. of 50% new caustic.

## PIECE-GOODS DYEING

CONTINUED FROM PAGE 107

overflow. Temperature is raised to 200° F. and maintained automatically. Dye flow is rapid, since the pump can deliver up to 1,200 gals. per min.; and the high rate of flow prevents local absorption from taking place too quickly.

### Sample Chamber Aids Matching

After dyeing proceeds for 30 mins., circulation of the liquor is stopped in the sample chamber, the chamber is opened, and a piece is cut from the sample swatch. If the machine is not being operated under pressure, necessary additions are put directly into the 50-gal. drum. If the machine is under pressure, the additions are put into the sample chamber, since the chamber can be cut off from the main system, opened to receive the addition, and then locked up and put back in the stream. Patches are taken at 15-min. intervals until the shade is matched.

Finally, the goods are rinsed thoroughly in fresh water, drained, and wheeled out of the cradle. The dyed fabric is ready for drying.

## EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 168

### Insulated Wall Glass

A cellular-glass insulating material, which combines both insulation and ceramic finish in a single unit, has been announced by Pittsburgh Corning Corp., Pittsburgh, Pa. Called Duraface Foamglas, the new material provides a durable, impact-resisting surface along with high insulating and moistureproof qualities. A wall can be erected in one operation. **(T-22)**

### Electric Counter

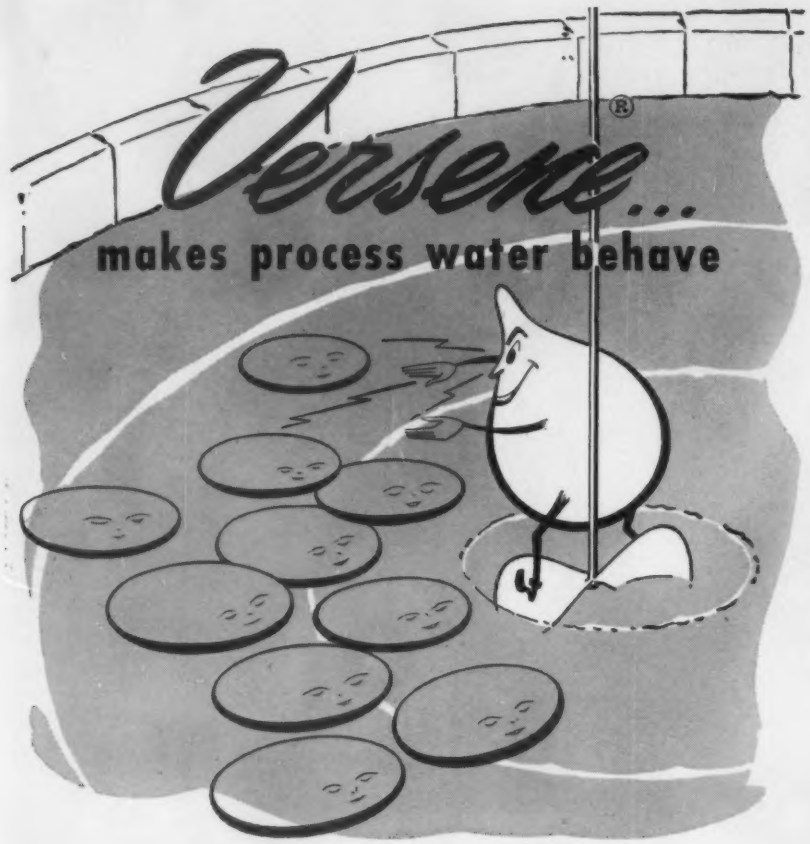
Increased reliability and reduced cost per million counts are featured in improved electric counters announced by Production Instrument Co., 704-06 W. Jackson Blvd., Chicago 6, Ill.

Named Super-Wizards, the count-

# missing the parade?

No textile manufacturer wants to miss out on the profit parade... especially not from machine failure caused by faulty lubrication. That's why so many textile operations now rely exclusively on Cities Service Lubricants. These highest quality lubricants permit rigid production schedules without costly breakdowns, thus adding dollars to the profit column. Talk with a Cities Service Lubrication Engineer. Or write: Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

**CITIES SERVICE**
**QUALITY PETROLEUM PRODUCTS**




**WATER • THE *IMPORTANT* CHEMICAL**

Few textile plants have access to water so soft that it doesn't interfere with washing, scouring, bleaching, dyeing, finishing or other wet processing operations. This is why all raw process water must be regarded as an *active chemical* until proven otherwise. Versene makes the active ingredients in process water behave and become inert. It completely and permanently softens water without forming precipitates by inactivating any calcium, magnesium, iron, copper, lead or other metal contaminants which may be present.

**VERSENE • ECONOMY WITH EFFICIENCY**

Textile manufacturers and processors now using the Versenes find them highly profitable in one or more wet operations. Let us show you how they can save *you* money.

**VERSENE • A COMPLETE LINE**

A complete line of basic Versene products and compounds permits chelation throughout the entire pH range. Practically any metallic contaminant may be "eliminated" with the *right* Versene. All Versene products are exceptionally stable at high temperatures throughout the pH range. Quality is unduplicated and uniformity of chelating power is guaranteed. Samples on request. Ask for Technical Bulletin No. 2. Chemical Counsel when needed.

KEY TO CHELATION

*"Chemistry's most precise chemicals"*

**VERSENES INCORPORATED**

*subsidiary of* THE DOW CHEMICAL COMPANY

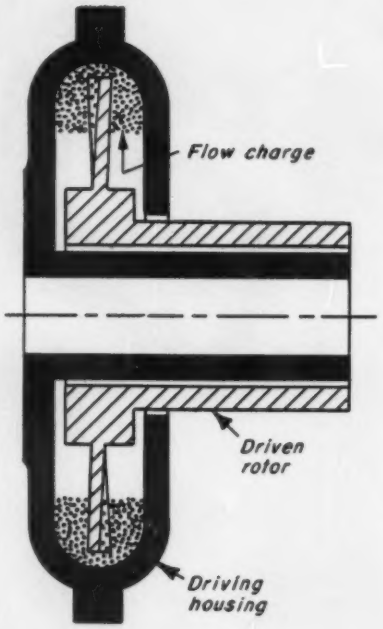
FRAMINGHAM, MASSACHUSETTS

WAREHOUSE STOCKS

Chas. S. Tanner Co., 2300 No. Brevard St., Charlotte, N. Carolina
Kraft Chemical Co., Inc., 917 West 18th St., Chicago 8, Ill.
Independent Chemical Corp., One Hanson Place, Brooklyn 17, N. Y.
Braun-Knecht-Heimann Co., San Francisco, Calif.
Van Waters & Rogers, Inc., Seattle, Wash. & Portland, Ore.
Braun Corporation, Los Angeles, California
Barada & Page, Inc., Houston, Dallas, Corpus Christi, New Orleans, St. Louis, Wichita, Oklahoma City, Tulsa, Kansas City, Mo.
Braun-Knecht-Heimann Co., Salt Lake City, Utah
George Mann & Co., Inc., 251 Fox Point Blvd., Providence, R. I.
European Manufacturing Agent:
Rexolinfabriken Aktiebolag, Helsingborg, Sweden

ters have an average life expectancy of 300-million counts. Rated at 1,000 counts per minute, they can operate at up to 1,600 counts per minute when suitably actuated. Balanced armatures avoid error ordinarily caused by shock or vibration.

They are available in base-mount, panel-mount, and dustproof types for a.c. or d.c. operation to 230 v. in four- and six-digit models with knob or key reset. **(T-23)**



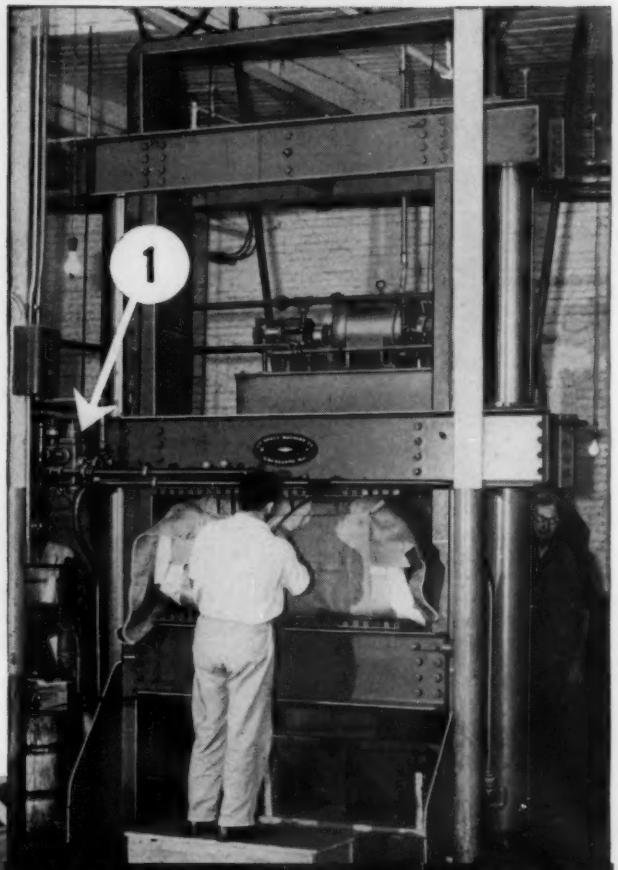

## Fluid Drive

Flexidyne, described as a dry fluid drive, has been announced by the Dodge Mfg. Corp., Mishawaka, Ind. At normal operating speeds, it does not slip; but in the case of an overload, it slips to give protection. A test application on cards has proved to be highly successful.

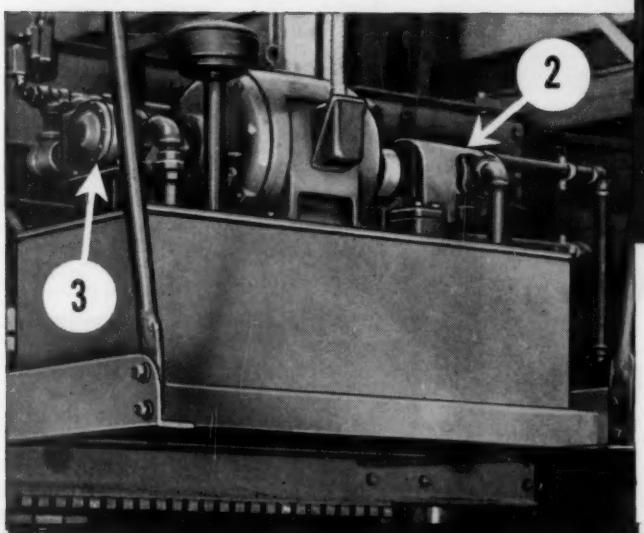
The Flexidyne drive is made up of a housing, with a rotor, free to turn concentrically, inside. Between the two is a flow charge, fine particles of spherical steel shot, which acts like a fluid. The flow charge transmits power from the housing to the rotor. This flow charge is easy to seal in, has a high density, and can stand relatively high temperatures. The amount of flow charge determines the torque capacity.

How the Flexidyne works: (1) the motor starts the housing to turn at no load; (2) the flow charge is thrown to the circumference of the housing, is compressed by centrifugal force, and revolves with the housing; (3) the

# VICKERS®
# HYDRAULIC EQUIPMENT
## helps produce
## *BETTER* BALES at *LOWER* COST




Beaty One-Floor Draw Bar Hydraulic Presses need no pit, are self-contained, complete more bales per hour, require less electric power, and the bales contain greater yardage of cloth. VICKERS Hydraulic Equipment is used exclusively. Press operation is conveniently controlled by hand lever on VICKERS 4-Way Valve (No. 1).




VICKERS Custom-Built Hydraulic Power Unit was designed and built to meet the particular needs of this press. A double-end motor drives two standard VICKERS Vane Type Pumps. (No. 2 a small-volume pump for maximum operating pressure of 2000 psi; No. 3 a large-volume pump for maximum operating pressure of 1000 psi.) Both pumps deliver oil for the exceptionally fast closing of the press; during bale compression at 2000 psi, pump No. 3 is automatically unloaded to reduce power requirement to a minimum.

**The advantages of using VICKERS Hydraulic Equipment as illustrated here by the Beaty Press are representative of what has been accomplished on many types of Textile machinery.**

**In the Textile industry, the use of Vickers Hydraulics is growing rapidly because of its adaptability, efficiency and economy. It offers exceptional advantages in simplification of design, ease of installation, accuracy and flexibility of control, and low maintenance. Automatic overload protection and inherent self-lubrication are additional highly desirable characteristics.**

**For further information about the benefit of Vickers Hydraulics ask our nearest Sales Application Engineering Office for a copy of new Textile Bulletin 54-66.**

**VICKERS Incorporated**
*DIVISION OF THE SPERRY CORPORATION*
**1588 OAKMAN BLVD. • DETROIT 32, MICH.**

*Application Engineering Offices:* ATLANTA • CHICAGO AREA (Brookfield) CINCINNATI • CLEVELAND • DETROIT HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS NEW YORK AREA (Summit) • PHILADELPHIA AREA (Media) PITTSBURGH AREA (Mt. Lebanon) • ROCHESTER • ROCKFORD ST. LOUIS • SAN FRANCISCO AREA (Berkeley) • SEATTLE TULSA • WASHINGTON • WORCESTER

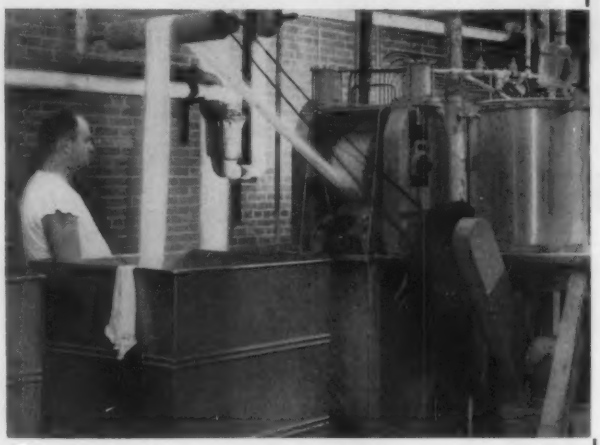
6792

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

**NO MAINTENANCE . . .**

*with this*
**STAINLESS STEEL TRUCK**

*NO SNAG*
*NO TEAR*
*NO RUST*



Invest in stainless steel equipment. It pays for itself in years of maintenance-free service. The first cost is the last cost.

Eliminate those extra maintenance and production costs with stainless steel handling equipment as shown above.

Provide extra protection to fine fabrics or yarns in the wet processing departments against rust and color contamination.

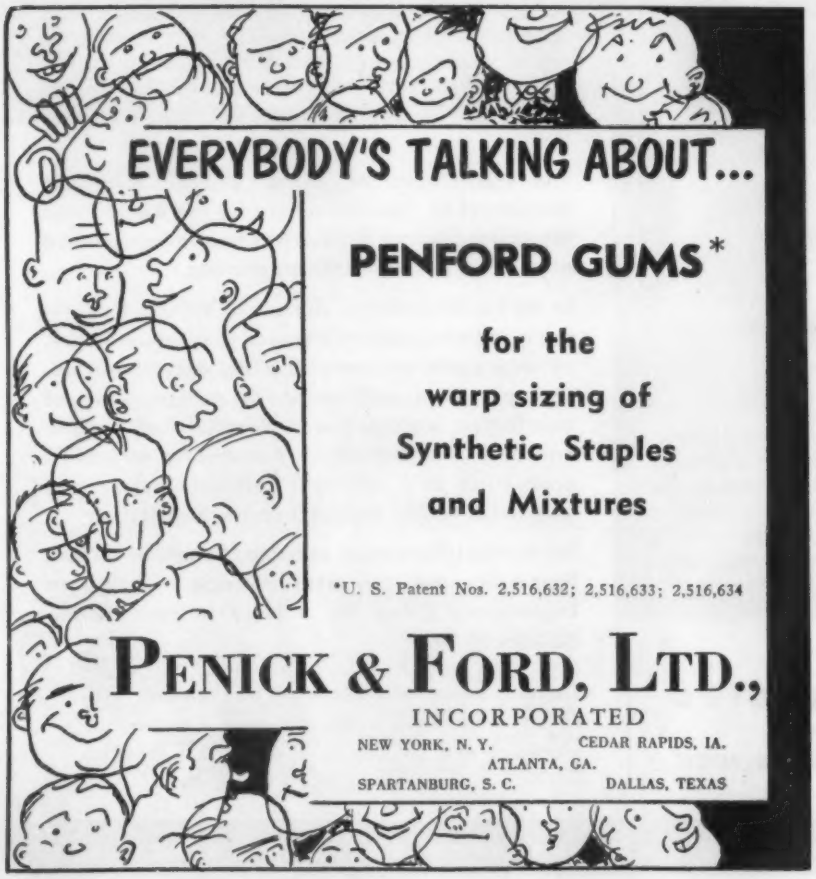
No painting or replacement of boards is necessary.

Write for free catalog and take advantage of our years of experience in the design of materials handling specials for the textile industry.

SEE US AT KNITTING ARTS SHOW—BOOTH 138

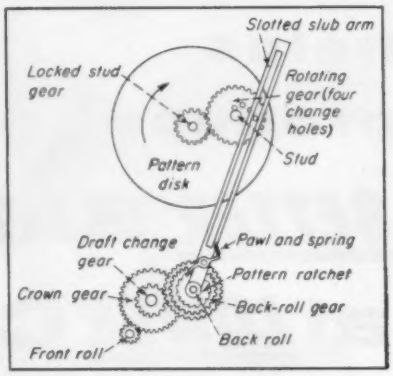
**KENNETT EQUIPMENT AND MACHINERY COMPANY**
KENNETT SQUARE • PENNSYLVANIA







rotor, connected to the load, is accelerated by the friction and wedging action of the revolving flow charge; (4) as the rotor and housing reach identical speeds, the Flexidyne operates with zero slippage; (5) in case of an overload, before damage is caused, the rotor slips relative to the housing, overcoming the friction and wedging action of the flow charge. A thermal cutoff is optional equipment. (T-24)




## Slubbing Attachment

An improved slubbing attachment has been developed by George Parrington, 12 East Ave., Pawtucket, R. I., and is available through Mathews Equipment Co., Providence, R. I. The two basic improvements are the elimination of the slubbing weight and the necessity for pins or buttons in the large disk. The slubbing weight was eliminated because it required close supervision of lubrication.

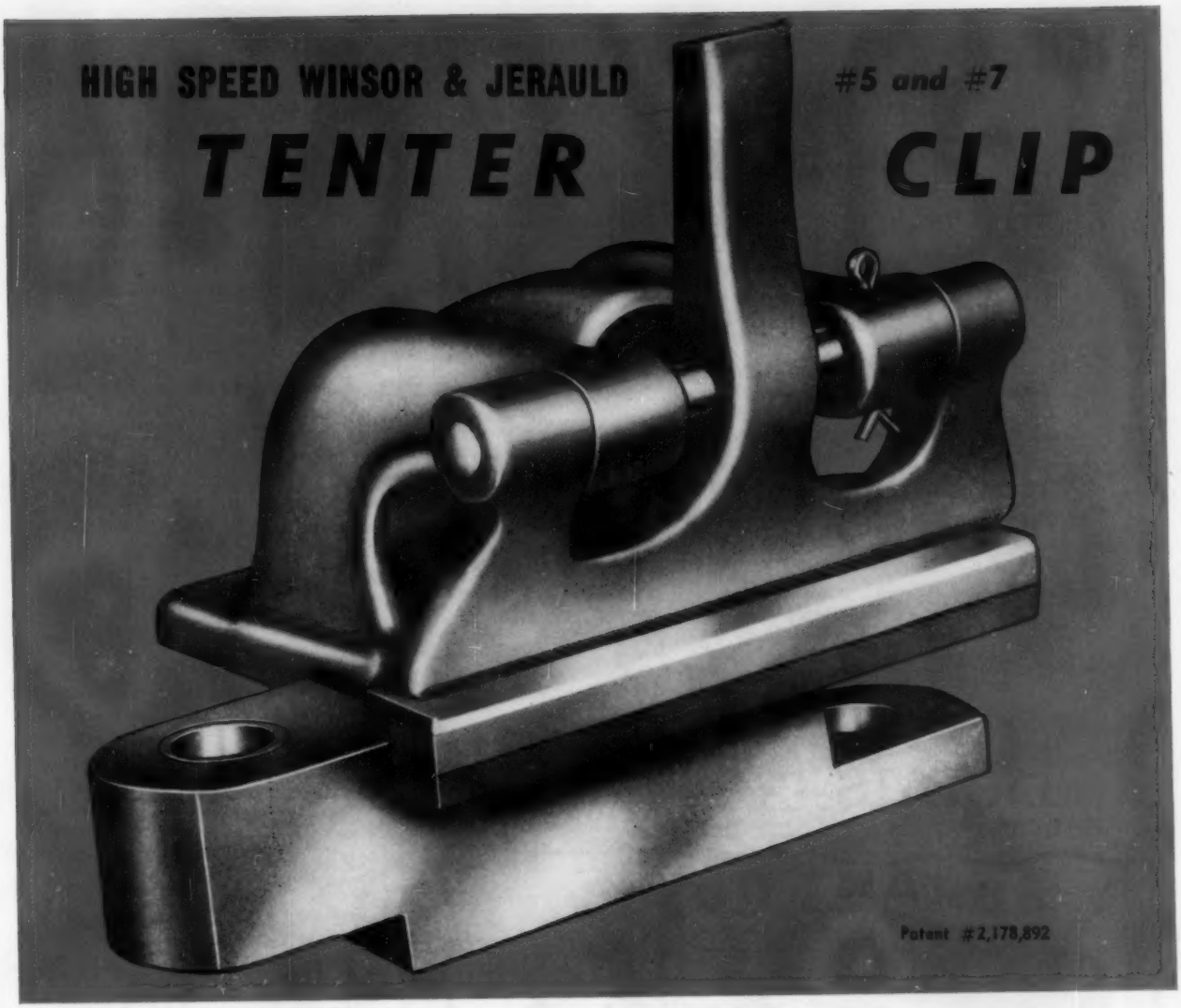
The long slubbing arm is positively driven in the back and forward motion by the stud on the rotating gear. Slubs produced can vary in length, thickness, and spacing; and adjustments are possible to produce slubs of even spacings in a repeat pattern.

The attachment can be furnished knocked-down with instructions for installation on such frames as the Prince, Smith and Bradford frames, Saco-Lowell silk-spinning frame, and Whitin F2 frame.

For large slub formation, a heavy roving and high draft is required. For more slubs, the speed of the pattern disk is increased. For shorter slubs, the change holes for the stud are used. (T-25)

## Stand-Up Fork Truck

A new stand-up fork truck with all the functions of the sit-down type is being manufactured by Market Forge Co., Everett 49, Mass. Two batteries can be placed on either side of the




## *The Choice of Discriminating Finishers*

**High speed tenter clips** are manufactured by Winsor & Jerauld for all makes of tenter frames and are engineered for your fabrics.

**Precision parts** reduce maintenance costs because they are made from selected metals and heat treated where necessary to meet the shock and stress of continuous high speed operation.

**The Clip Body** is made of high grade malleable iron, reinforced at vital points, and the clip jaw is constructed with a special high grade bronze alloy and is ribbed for extra stability.

**The closed front,** a patented design, protects the cloth from spatter of sprocket lubricants. It also reduces the unit pressure of each clip against the rail and increases the life of the chain.

**Our Southern Division** is fully equipped to check and repair tenter chains of all types. We look forward to serving you from our main plant in Providence or from Charlotte.

**EXPERTS IN CLOTH FINISHING MACHINERY**

**Winsor & Jerauld**
**MANUFACTURING COMPANY, INC.**

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# Guard your goods with these protective, economical Bemis coverings...

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| **Laminated Yardage, Laminated Sheets, Laminated Tubing, Laminated Bale Caps** | Durable burlap laminated with a waterproof adhesive to heavy creped kraft paper or other linings . . . a really tough, serviceable protection. |
| **Tite-Fit Tubing** | The spiral-sewn burlap tubing with 2-way stretch; sturdy, economical, fast to use. |
| **Paper Rug Covers** | This double-wall tubing enables rug manufacturers to cut packaging time as much as 50 percent. |
| **Burlap Piece Goods** | Mixed carloads of burlap piece goods in a wide assortment of widths and lengths are available. |

*Write for complete information about Bemis protective covering for bales and rolls . . . or ask the Bemis Man to help you work out the most economical, efficient solution to your problem.*

Bemis

BEMIS BRO BAG CO.

111 No. 4th St., Box 32
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# DURANT DOFFMETER

Model 3-DM
Alaska Gray and
Seal Brown finish

**ELIMINATE OVERRUNS**

Warns operator or stops machine when run is completed. Yes — eliminates annoying underruns, too!

**UNIFORM LENGTHS**

Easy, accurate way to assure uniformity in lengths of cloth or yarn.

**MAXIMUM PRODUCTION**

A Durant Doffmeter takes the responsibility — operator can do other work.

*Specifically Designed*
**for LOOM APPLICATIONS**

The Durant Doffmeter is a compact, predetermined counter designed to cut off the loom or signal when the preset number of yards is reached. Eliminates cut marks and waste ends by assuring uniform yardage . . . simplifies inventory control.
Present day high costs make the installation of Durant Doffmeters on every loom a practical money saving investment. Plan now . . . write or contact us for detailed information.

**DURANT MANUFACTURING CO.**
1931 N. Buffum St., Milwaukee 1, Wis.
131 S. Water St., Providence 3, R. I.

*Representatives in Principal Cities*

Send for Catalog No. 501

**PRODUCTIMETERS** SINCE 1879 *Count Everything*


operator without sacrificing mobility and with an increase in performance. (T-26)

## Magnetic Seal

A rotary seal to prevent escape of fluids under pressure around a rotating shaft is available from Magnetic Seal Corp., Higgins St., Georgiaville, R. I. Sealing surfaces are held in contact by magnetic force when no fluid pressure exists, and no spring is used. (T-27)

## Cast-Iron Fans

Cast-iron fans for rugged industrial applications are available from the Sturtevant Div., Westinghouse Electric Corp., Box 2278, Pittsburgh 30, Pa. The fans will handle textile fibers, dust, gases, and fumes. Four different wheels and three drive arrangements are available. Air volumes: 150 to 12,000 cu. ft. per min. (T-28)

## Digital Cycling Counter

A five-bank digital cycling counter, Model N-655, suitable for counting events, measuring frequencies, determining revolutions per minute, and similar applications, is being manufactured by Brush Electronics Co., 3405 Perkins Ave., Cleveland 14, Ohio. Frequencies and speeds can be controlled by presetting upper and lower limits. (T-29)

## Heavy Bar Pullers

Snap-on Tools Corp., Kenosha, Wis., has announced a new heavy bar puller. Up to 50 tons of power are provided for big machinery jobs.

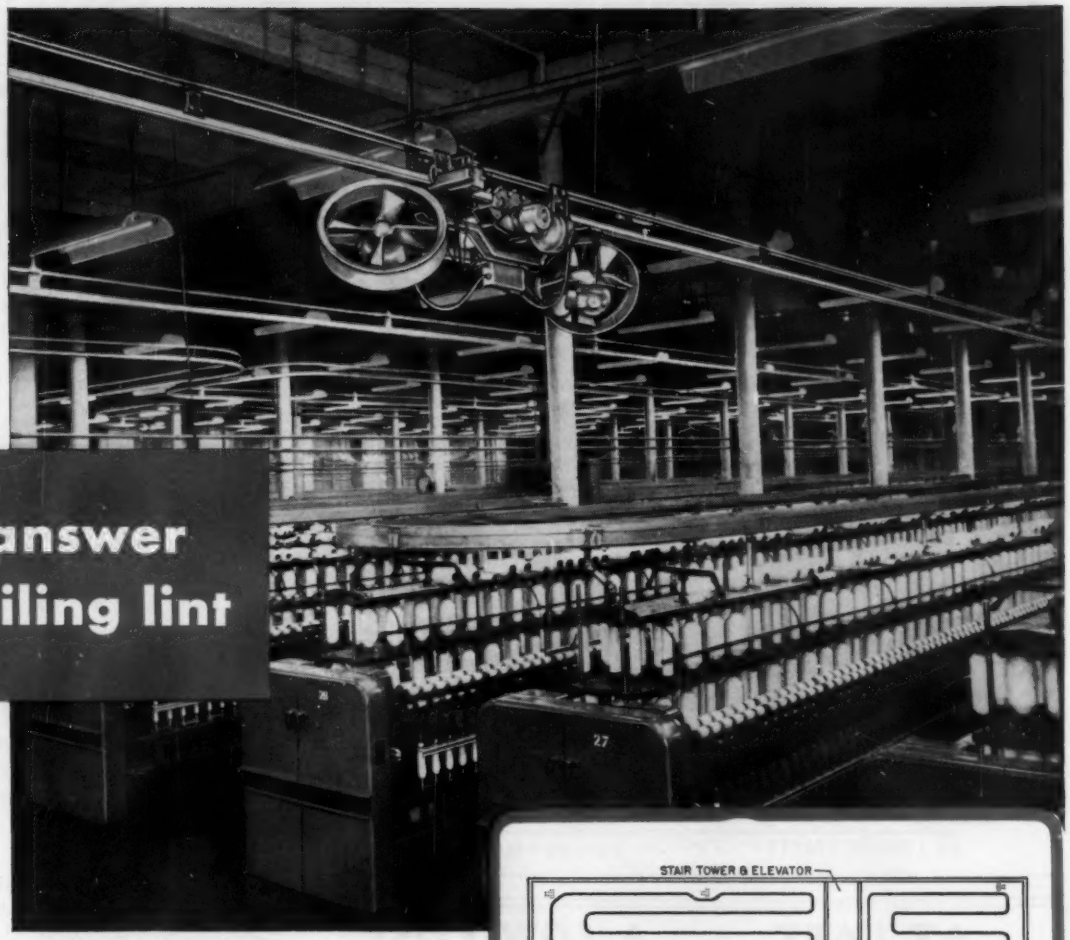
The yoke is machined from 2½-in. square stock and is 16 ins. long. Objects can be pulled with openings a minimum of 6 ins. apart, center to center. (T-30)

## Steel Shelving

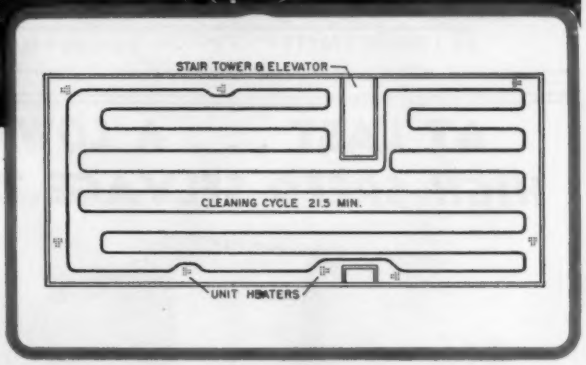
A line of steel shelving with 1,000 different combinations for custom assembling an installation has been brought out by Standard Pressed Steel Co., Jenkintown, Pa. Components and assemblies are interchangeable. (T-31)

## Valves

A new line of alloy gate, globe, and angle valves has been announced by Crane Co., 836 S. Michigan Ave., Chicago 5, Ill. Features: a split-wedge disk design in the gate valves and an improved disk-stem connection in the globe and angle valves. Screwed ends



# The answer to ceiling lint




## Louden's Automatic Twin-Fan ceiling cleaner

More and more mills now keep their ceilings *continuously* clean and free of lint—by installing the Louden Twin-Fan Cleaner that cleans without disturbance to any processes going on in the machines below it.

The installation pictured above is typical. This is a spinning room in a well-known southern mill. The room is "blanketed" by 2800 feet of Louden track over which the Louden twin-fan—hence, *two directional*—ceiling cleaner travels continuously, making the trip once every 22 minutes.

The twin fans sweep on *both* sides of the track at once. Independently adjustable, each fan can be pointed in any direction, to suit the special needs of your room. They clean both sides of ceiling beams and other surfaces. The threat of "gout" or "slubs" is done away with, together with manual blowing down, or ladder climbing to adjust stationary fans. There are no dead air pockets, humidity is even throughout. You can have features such as automatic shut off and turn on for passage through areas where fan blowing is not wanted.

You can be sure of highest dependability, efficiency and economy because this is a product of Louden's long experience in designing and building overhead track and overhead equipment of every type.

Let a Louden engineering representative tell you what you need, and how much it will cost, what it will save. Write now, before you forget.

**THE LOUDEN MACHINERY COMPANY**

**5104 Court St., Fairfield, Iowa**

***A Subsidiary of Mechanical Handling Systems, Inc.***

Louden

MONORAIL & CRANES

**Since 1867—the first name in materials handling**

## Is Space an Important Factor?

**Then Use This Distinguished Line of Close-Coupled Pumps**

These GMC Pumps are ideal for a multitude of jobs. Smooth and efficient whether vertical, horizontal, up-side-down or any inclination. Low first cost, low power and maintenance costs. Top quality "by Aurora."
Caps. 10 to 800 G.P.M.
Heads to 250 Ft.
AURORA Always PUMPS
Type GMC Aurora Close-Coupled Pump
Write TODAY for CONDENSED CATALOG "M"
DISTRIBUTORS IN PRINCIPAL CITIES
also BULLETIN 120

**AURORA PUMP** DIVISION
THE NEW YORK AIR BRAKE COMPANY
31 LOUCKS STREET AURORA • ILLINOIS

## AT LAST . . . A LOW COST HIGH SPEED SELVAGE TRIMMER

**THIS NEW LOW COST HIGH SPEED SELVAGE TRIMMER**

cleans cloth at the selvages where most hanging thread removal is required today.

It removes all selvage threads at speeds up to 150 yards a minute—at one pass.

Equipped with two revolvers—one for the face, one for the back of the cloth. It will, at the same time, remove all hanging ends from face and back of cloth.

A loop clipper attachment converts selvage loops to hanging threads for trimming.

The trimming unit has its own integral section, exhaust and collection compartment.

So in effect the new selvage trimmer does the work of a shear at a much lower capital investment.

The selvage trimming units may be mounted on existing machines, for cleaning one or both selvages.

*Our representative will be glad to survey your needs and determine whether this selvage trimmer will meet them. No obligation.*

# HERMAS MACHINE CO.

WARBURTON AVENUE HAWTHORNE, NEW JERSEY


are available in ¼- to 2-in. sizes; flanged ends: ½- to 6-in. sizes. **(T-32)**

### Internal Backstops

The American Pulley Co., 4200 Wissahickon Ave., Philadelphia 29, Pa., has announced that its Shaft-King speed-reduction unit is now equipped with an internal backstop. All sizes, in 13-to-1 and 20-to-1 ratios, can be so equipped, except the two smallest sizes. The backstop prevents backward rotation. **(T-33)**

### Variable-Speed Drive

A small variable-speed drive with a 2-to-1 speed-range ratio for 1- to 5-hp. drives is being built by T. B. Wood's Sons Co., Chambersburg, Pa. The pitch diameter is changed by one adjusting screw. **(T-34)**

### Electric Truck Lubrication

Two systems of centralized lubrication are available for the electric trucks made by Automatic Transportation Co., 149 W. 87th St., Chicago, Ill. A one-shot system is available for BF models and two-shot systems for LF and LFS models. **(T-35)**

### Pillow Blocks

A new series of ball-bearing pillow blocks and flanges—the SP series—has been announced by Ahlberg Bearing Co., 3025 W. 47th St., Chicago 32, Ill. New features are greater bearing capacity, increased alignment range, and more interchangeability. Shaft sizes: ¾ to 2 15/16 ins. **(T-36)**

### Nylon-Lined Bearing

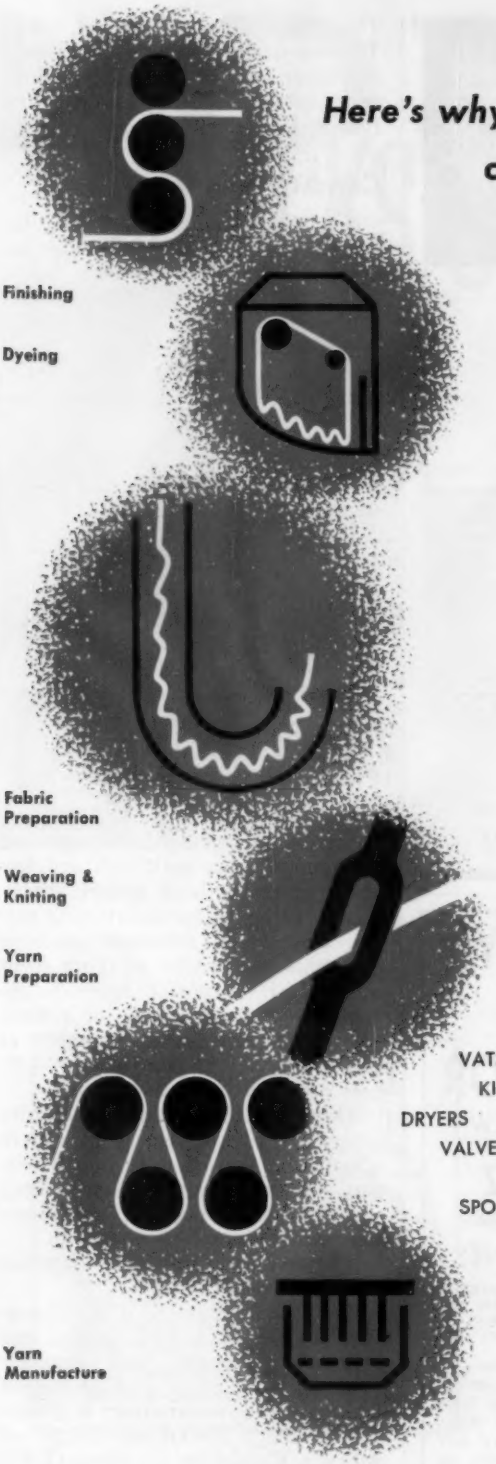
A nylon-lined sleeve is being produced by Nylacore Corp., Great Neck, N. Y. The bearing has a metal shell into which is molded a thin lining of nylon of about 0.005-in. thickness anchored to the outer shell. **(T-37)**

### ¾-Hp. Speed Reducer

An infinitely variable speed reducer with a constant torque rating of 100 in.-lbs. (¾ hp. at 450 rpm.) has been announced by Revco Inc., 2 E. Franklin St., Minneapolis 4, Minn. This Model 24 Zero-Max has the speed range and operating characteristics similar to the smaller Zero-Max units. **(T-38)**

### Low-Overhead Trolley

An overhead trolley developed for low headroom situations for use with chain blocks, electric hoists, and special applications is available from




# *Here's why* CRUCIBLE STAINLESS STEELS

## *cut costs, speed production in textile plants . . .*

Although the beauty of Crucible Rezistal® stainless steels give a *show-place* look wherever they are used, they certainly are no luxury. Actually, stainless steel's ability to resist the attack of highly corrosive materials, its exceptional strength, and its ease of cleaning make it the most *practical* metal you can find.

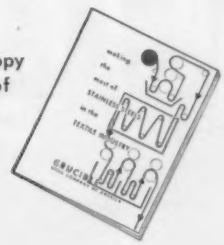
Furthermore, Crucible stainless steels with their high wear and abrasion resistant properties outlast other materials many times. That means stainless equipment stays in service longer . . . eliminates costly down time. And, of course, Crucible stainless has no surface plating to nick, chip, or wear away.

Let us help you make the most of stainless steels in your plant. For practical, economy-minded advice on stainless selection, fabrication or maintenance call Crucible.

***Here's where stainless is a natural in the textile plant***

VATS JIGS BECKS PADS
KIERS WASHERS EXTRACTORS
DRYERS SLASHERS CONVEYORS DRIP PANS
VALVES & PIPING HOODS MIXING TANKS
HARDWARE POTEYES GUIDES
SPOOLS ROLLS TRUCKS & BASKETS

**Write now** for your free copy of "Making the Most of Stainless Steel in the Textile Industry."

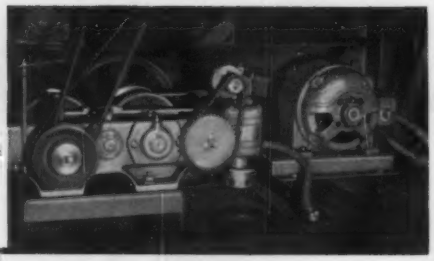


**CRUCIBLE** first name in special purpose steels

54 years of Fine steelmaking **STAINLESS STEELS**

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

**LEWELLEN**
*Automatic*
**RANGE CONTROL**



*Maintains uniform fabric tension for bleacheries and mills processing carpets, bed spreads, area rugs, etc.*

Illustrated above is a Lewellen Automatic Range Control at work in one of the oldest and largest companies in the tufted textile industry. This famous control may be applied to any process for maintaining uniform tension. Speeds are set on one machine, and all other speeds are controlled automatically to maintain any desired tension on the materials. Speeds can be changed at anytime without interrupting the controls. May we tell you how this time-saving, money-saving equipment will do wonders for you?

Open or enclosed, vertical or horizontal Variable-Speed Transmissions in all sizes from fractional h.p. to 60 h.p. . . . Variable-Speed Motor Pulleys in all ratings from fractional to 7½ h.p. Speed range, 3 to 1 for all pulley sizes. (One size—2¾ to 1.)

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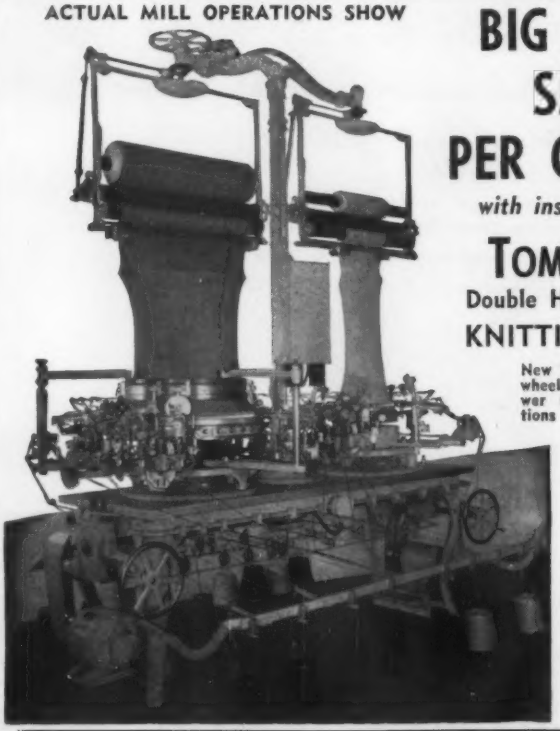
ACTUAL MILL OPERATIONS SHOW



**BIG WEEKLY SAVING PER OPERATOR**
*with installation of NEW*
**TOMPKINS D-2**
Double Head Spring Needle
KNITTING MACHINES

New stop motions and furnishing wheels provide the profitable answer to reducing cloth imperfections and needle breakage!

Actual installations are showing remarkable savings in knitting various types of material. SOME MILLS CLAIM THEY HAVE CUT PRODUCTION COSTS IN HALF . . . OTHERS REPORT SAVINGS UP TO $600.00 PER WEEK PER OPERATOR, over old machines. All this PLUS AN IMPROVEMENT IN FABRIC QUALITY!

*write for complete data*

*See NEW FEATURES of the D-2 at the KNITTING SHOW*

**Tompkins Bros. Co. • Syracuse 4, N.Y.**

The Forker Corp., Cleveland, Ohio. The new design allows the chain block or electric hoist to be built in. Clearance between trolley load-bar and track is ½ in. (T-39)

## Conditioning Oven

The Freas conditioning oven for making moisture tests on textiles has been redesigned by Precision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill. New balances permit moisture determinations from 30 to 0.1%. An inner door of Herculite plate glass permits observations during testing. (T-40)

## Scoop Attachment

Lewis-Shepard Products, Inc., Watertown, Mass., has designed a scoop attachment for its SpaceMaster electric fork trucks. The attachment converts the truck for snow removal or for handling coal, sand, etc. No hydraulic valves or hose lines are necessary for the operation of the scoop. Capacity is 12½ cu. ft. (T-41)

## Photoelectric Control

Photoswitch's registration control, Type 23LF3, Model 1006, operates continuously over both high and low speed ranges without special attachments. Designed for maintaining precise accuracy in automatic machine operations on textiles or other sheet material, this control responds instantly to the appearance of a mark printed on material moving past at speeds from 15 to more than 500 ft. per min.

The abrupt change in light intensity caused by the passage of the mark actuates the control relay, which triggers speed-correction devices to keep the material in perfect synchronization with the machine operation.

The circuit will respond to impulses as short as 0.0005 sec.

The scanner, supplied with the control, consists of a light source, lens systems, phototube, and amplifier tube, all mounted in a single rugged housing. The manufacturer is Photoswitch Div., Electronics Corp. of America, Cambridge 42, Mass. (T-42)

## Yarn-Splice Cement

Tinted and high-temperature splicing cements, developed and manufactured by Pioneer Latex & Chemical Co., Middlesex, N. J., are now available.

Splic-It is a neutral-color, ready-to-use cement for splicing yarn ends without knots.

Tinted Splic-It is used on predyed

# LOTOL®

## BACKS UP your carpet sales story!

Tufted carpeting is really catching on with value-conscious homemakers. One big reason is this carpet's all-important backing of rubber-plastic. It's your big value story!

Show your customers how rubber-plastic backing:

- **Permanently anchors the pile.**
- **Substantially improves hand and body.**
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- **Permits repeated washings without fear of breaking down the backing.**
- **Prevents raveling at seams and edges.**
- **Prolongs carpet life.**

This backing material, custom-compounded by Naugatuck under the trade name Lotol, adds greatly to the quality characteristics of the carpet... permits substantial savings in its manufacture... makes possible its popular price!

Naugatuck will gladly work with any carpet manufacturer to provide a Lotol compounded to meet its requirements and price.

**NAUGATUCK CHEMICAL**
**Carpet Fabricating Accessories:**

**RUG-SEALZ®**—Carpet seaming adhesive.
**KWIK-GRIP® TAPE**—Carpet seaming tape with metal grippers for face-up sealing.
**RUG-SEALZ TAPE**—Seaming tape ideal for rubber-backed cotton and synthetic-tape-yarn carpeting.
**HEAT-SEALZ TAPE**—For binding rugs and fabricating rubber cushions.
**AUTOMATIC IRON** with attachment for applying rug binding.

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**World's Largest Latex Producer and Compounder**

# Naugatuck Chemical

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Performance-proven for automatic, high speed production of interlock and jersey garments

more and more, the choice of the most successful manufacturers of mens' and womens' knitted outerwear

knitters' choice, too, because no other circular fully automatic knitting machines equal OGA and OTA for simplicity, ease of operation and dependable production of first quality merchandise.

Catalina
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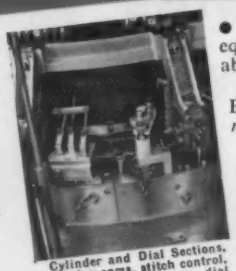
and dozens more of the nation's foremost plants



Cylinder and Dial Sections, turning cams, stitch control, 3 color yarn changer, dial cam operating levers.

● Your safest way to judge knitting equipment is to find out what users say about production and maintenance costs.

Today, ORDNANCE GAUGE EQUIPMENT *outsells all comparable machinery by a substantial margin!*

Comparison proves that ORDNANCE GAUGE machines make possible 20% or more increased production with trouble-free operation and simplicity of operational adjustments. Write at once for catalog and further information.

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AMBER & HAGERT STS., PHILADELPHIA 25, PA.

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CIRCULAR FULLY AUTOMATIC KNITTING MACHINES

Sales Representative
MAC M. ROTHKOPF
317 BUSHWICK AVENUE
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BUILT TO STAND THE GAFF

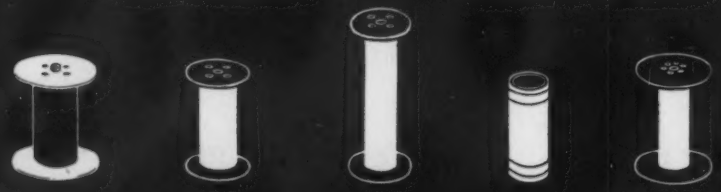
Now more than ever before with the many new types of synthetics it's important that bobbins be designed in every detail to fit specific needs of the user, then built to exacting specifications.

The Allentown Bobbin Works is a custom "shop" on a production line basis. You can have the individual variations your production requires at cost of a "standard" product.

All types of bobbins for fine yarn processing designed and built to fit your needs.

Brass bushings are now standard for all straight spindle bobbins.

BW MACK
ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN PENNSYLVANIA



TAKE-UP BOBBIN—BAKELITE BARREL, ALUMINUM HEAD.

WINDER-SPINNER BOBBIN - BAKELITE BARREL AND BUSHINGS, FIBER HEAD.

TWISTER BOBBIN—ALL BAKELITE BARREL AND HEAD—BRASS BUSHINGS FOR STRAIGHT SPINDLES.

HEADLESS PACKAGES IN SEVERAL TYPES OF ALL BAKELITE CONSTRUCTION.

SHIPPING BOBBIN—MAPLE BARREL, FIBER HEAD.

BOOTH 150, KNITTING ARTS SHOW, ATLANTIC CITY

yarns where invisible color splices are desired. It is colored to standard shades of red, green, blue, gold, brown, black, and white; and individual shades can be matched on special order.

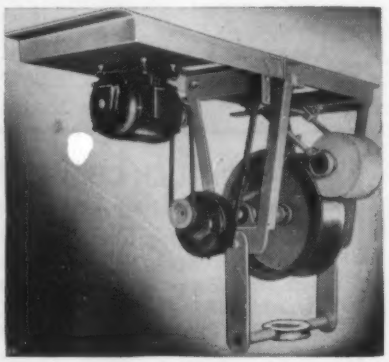
Splic-It C is designed for use in high-temperature processing. Laboratory tests show Splic-It C to effectively resist all stiffening, softening, and weakening of the bond.

The knotless splices are said to be soft and flexible. Samples of the cements are available on request. (T-43)

## Economizer for Steam Plants

The low-draft resistance economizer, developed by J. Wylly Keck, 2520 San Domingo St., Coral Gables, Fla., is a low-cost heat-recovery apparatus that performs at high efficiency with a negligible draft loss. Neither an induced draft fan nor a high stack is required for efficient performance.

The economizer is readily adaptable for use in existing boiler-plant installations. The element bank can be installed horizontally inside a flue-gas duct, vertically inside the stack, or in a special casing manufactured to become a section of the flue-gas system. The economizer is welded with or without extended heating-surface fins. (T-44)



## Correction

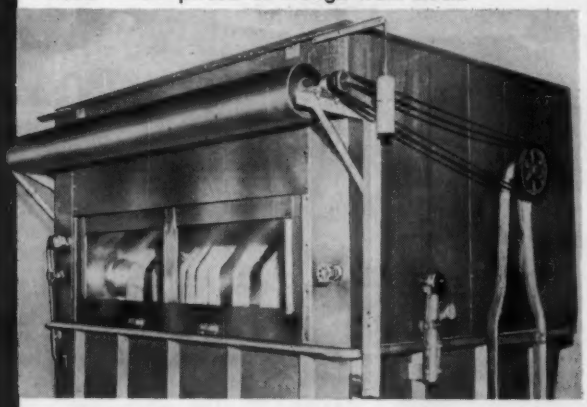
In the February issue of TEXTILE WORLD, a Wiesner-Rapp three-way reel was pictured upside down on p. 220. Pictured right-side up, the features of the three-way reel remain the same. The reel can be furnished as an idler reel or as a driven or drag reel by the addition of a rubber-covered rider roll. (T-45).

## Adjustable-Speed Drive

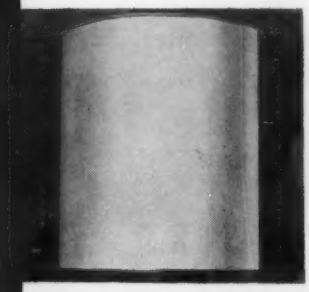
An adjustable-speed drive called the Dynaspede coupling, developed by the Dynamatic Div., Eaton Mfg. Co., Kenosha, Wis., is a stationary-field, liquid-cooled, eddy-current adjustable-speed power-transmission device.

# PLANT EQUIPMENT for DYERS & FINISHERS

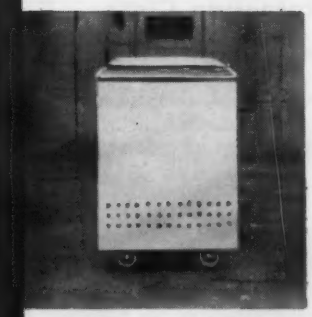
Speed-up production, modernize your plant with custom-made tanks, vats, steel trucks and roller hoods. Units expertly constructed for your specific need — low priced as though from stock.



**HOOD COVERS FOR FABRIC ROLLERS.** The new way to reduce dyeing time by as much as one half. Prevents streaking, maintains an even temperature throughout the dyeing operation. Sliding glass doors allow operator to watch the processing. A time-cutting, cost-saving must for dyers of nylon, orlon, dacron and other synthetics.



**TANKS, VATS, TRAYS.** Manufactured of stainless steel in any quantity to your specification. Make the most efficient use of your plant space while increasing production capacity.



**STAINLESS STEEL TRUCKS.** Mounted on precision, ball-bearing casters for easy handling. Custom built mobile trucks to move materials around the plant floor. Easily cleaned, of rugged construction.

*For an estimate of your requirements call or write:*

**TEXTILE TRIMMING & BOARDING MACHINE CO.**
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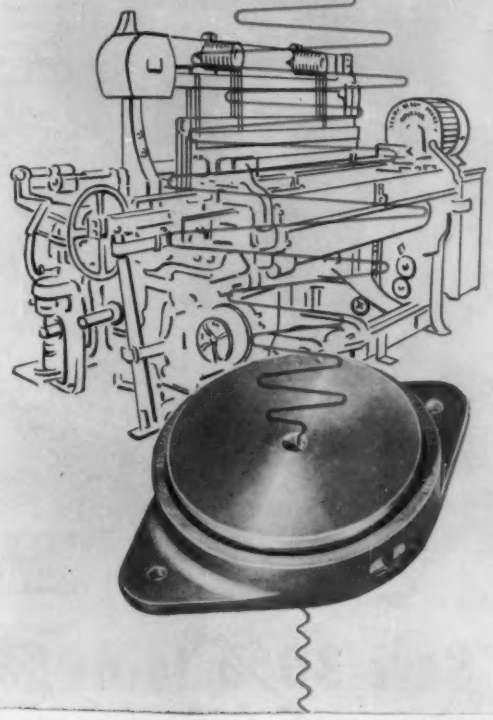
# Why live with loom VIBRATION?



The unique deflection principle of Silentbloc rubber-in-metal mounts can make loom vibration a thing of the past. Just four units will convert the noisiest loom ever made into a smooth-running, exceptionally quiet machine.

For catalog and details of our free trial plan on Silentbloc rolling joint mounts write to The General Tire & Rubber Company, Industrial Products Division, Dpt. G-1, Wabash, Indiana.

"From Plans to Products in Plastics and Rubber"

**These are General Tire Industrial Products now serving Industry**

Silentbloc vibration and shock mountings · Silentbloc bushings · Silentbloc bearings · Oil & hydraulic seals · Bonded to metal rubber parts · Hydraulic brake parts · Metal stampings · Extruded & molded rubber · Extruded plastic · Polyester glass laminates · Sponge rubber · Glass run channel · Vibrex® fastners

THE GENERAL TIRE *Industrial Products Division* WABASH INDIANA

6 TIMES A YEAR is only buffing needed for this Tennantized weave room floor.

3 REASONS WHY YOU CAN NOW

# Save 30% to 60% in Floor Maintenance Costs

**Important NEW improvements** in the TENNANT System now make it possible—a saving of 30% to 60% in floor care costs annually, compared to 5 years ago. Here's why, as reported by many mills:

**1. You use 50% less manhours** today in cleaning a TENNANT-treated floor because its dirt-resistance has been almost tripled. You buff only 1/5 to 1/10 as often . . . need only a dry mop for daily cleaning.

**2. Floor seals last 4 times longer** today because they are more wear-resistant, stand up better under oil, grit and dirt. Bright, lustrous finish is easily renewed without need for sanding.

**3. You save time in problem areas,** like weave rooms, with new TENNANT materials that resist humidity, starch, discoloration, etc. Saves manhours (see photo above). *Write today for details; ask for estimate of savings possible in your mill.*

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ESTABLISHED 1870

G. H. TENNANT CO.
2586 N. 2nd Street
Minneapolis 11, Minn.

**FLOOR MAINTENANCE SYSTEM**

Driven by a constant or variable-speed power source, the Dynaspede coupling delivers torque or speed to suit specific processing requirements. (T-46)

## Adjustable-Speed Drive

The American Pulley Co., Philadelphia 29, Pa., has announced a single-groove, wide-range, adjustable-speed drive available in Q, R, and W belt sections. The new drive will safely transmit up to 30 hp. (T-47)

## Recorder

A new rate recorder, announced by Electric Tachometer Corp., 2218 Vine St., Philadelphia 3, Pa., makes permanent records of speed or production rates and totalizes the production units on an integral counter. A typical use would be counting breaks in textile processing. (T-48)

## Static-Control Equipment

Hewson Co., Inc., Newark 2, N. J., has announced the Model 100 TAKK static-control system. This new unit is intended for applications where space limitations prevent the use of the standard TAKK equipment. It is also intended for use where static problems are less severe and processing speeds lower than where the standard TAKK high-powered equipment is required. (T-49)

## Packaged Boiler

The Model Y packaged boilers developed by Ames Iron Works, Inc., Oswego, N. Y., has a three-pass design with simple refractory and baffles for ease and low cost of cleaning and maintenance. Heating surface; 5 sq. ft. per boiler horsepower. Sizes to 500 hp., pressures to 200 psi. (T-50)

## Mistproofing Cloth

Seecloth, a treated cloth that mistproofs glasses, goggles, masks, and the inside of windshields, is available from Hygiene Research, Inc., 684 Broadway, New York 12, N. Y. A cloth is good for six months. Cloth strips are available at $14.40 per gross. (T-51)

## Moisture Balance

An improved and redesigned balance for moisture determination has been announced by Torsion Balance Co., Clifton, N. J. The new balance, known as Model DB-5, has a single calibrated stainless-steel beam and a vernier slide weight, with coarse and


For more information, write direct or use Reader-Service post card.

DU PONT

TEXTILE MACHINERY NEWS

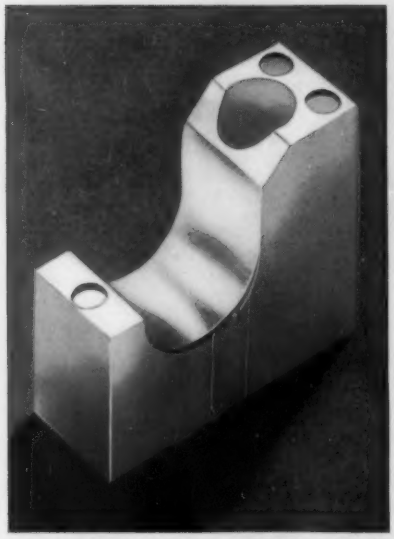
PROPERTY AND APPLICATION DATA ON THESE VERSATILE ENGINEERING MATERIALS: "ZYTEL," "ALATHON," "TEFLON," "LUCITE."

NO. 2 — 1955

# Molded "Zytel"* Nylon Resin Has Many Uses In Modern, Efficient Textile Machinery

## "Zytel" is tough, wear-resistant and needs no oil; properties can cut costs drastically

Here are but a few of the many uses for Du Pont "Zytel" nylon resin in modern textile machinery. This change-over to "Zytel" has meant longer-wearing parts;



A top roll hanger of "Zytel" nylon resin for use on a spinning frame. Each hanger serves two spindles. Hangers need no lubrication—eliminate oil contamination of yarn.

parts that resist breaking and warping; parts that usually need no oiling, thereby reducing spoilage and maintenance costs. Significant production economies are also possible with parts molded of "Zytel" nylon resin.

A creel spindle with five parts of molded "Zytel" nylon resin. When assembled, parts provide both radial and thrust bearings. Spindle turns easily, avoids uneven yarn.

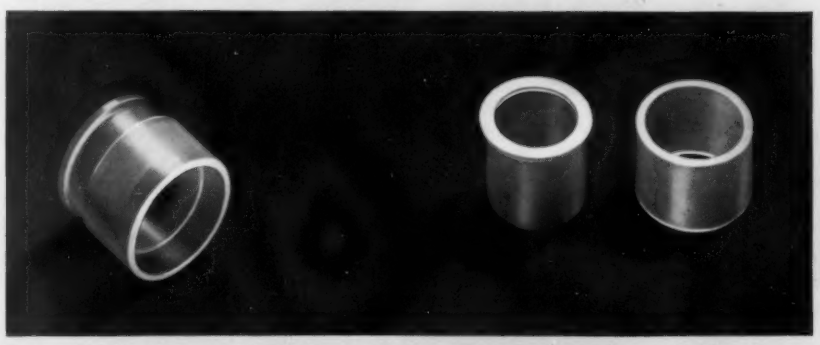
The pieces of "Zytel" shown on this page were designed and developed by Macdonald and Sons, Inc., Providence 1, Rhode Island. In all of these applications, oiling with its messy results, has been eliminated. Whenever possible these pieces of "Zytel" have been designed to snap into existing oil holes for quick, inexpensive installation.

### Other Important Properties

Parts of "Zytel" are tough, lightweight, have high impact strength. They can operate continuously up to 250° F. Another advantage—rapid, economical production techniques. With injection-molding, for example, parts can be mass-produced in multi-cavity dies. One molded piece can often do the work of assemblies made from two or more pieces of other materials. Design is simplified, assembly time reduced. Usually parts of "Zytel"

(*Continued, column 1 back side*)

A bearing insert for the drum shafts on a woolen spinning frame. Because these inserts of "Zytel" nylon resin need no lubrication, greasy, matted fly waste is eliminated, maintenance costs reduced.



A two-piece bearing assembly for the press rolls on a wool spinning frame. Molded of wear-resistant "Zytel" nylon resin, two assemblies are used for each spindle.

OVER

*"Zytel" is the new trade-mark for Du Pont nylon resin.

DU PONT
REG. U.S. PAT. OFF.

TEXTILE MACHINERY NEWS

PROPERTY AND APPLICATION DATA ON THESE VERSATILE ENGINEERING MATERIALS: "ZYTEL," "ALATHON," "TEFLON," "LUCITE."

NO. 2 — 1955

## Molded "Zytel" *(continued)*

need no machining or refinishing. To use "Zytel" efficiently design engineers should be thoroughly familiar with its unique combination of properties.

*Top:* Bearings of "Zytel" nylon resin, which are now standard equipment on the covering machines built by the H. H. Arnold Company, Rockland, Massachusetts. There are about 80 per machine.

*Lower:* Another bearing used by the H. H. Arnold Company. (All the parts pictured in this story were designed by Macdonald and Sons, Inc., Providence 1, Rhode Island.)

# Bobbin holder uses washer of filled TEFLON® to replace ball bearings

The Dixon bobbin holder. Its simplified design (there are no ball bearings) is possible because of a self-lubricating washer of Du Pont "Teflon" tetrafluoroethylene resin. Bobbin needs no brakes. (Manufactured by the Dixon Corporation, Bristol, R. I.)

The Dixon bobbin holder uses a washer of self-lubricating filled "Teflon" tetrafluoroethylene resin instead of ball bearings. With this simplified design, there is no leakage of oil and grease to contaminate the yarn. All working parts are encased in the bobbin and therefore cannot collect lint.

No brakes are needed on this improved bobbin holder to adjust the amount of torque to diminishing size of package without allowing over-run.

### "Teflon" and Textile Machinery

Du Pont "Teflon" tetrafluoroethylene resin offers many new design possibilities in the textile machinery field. In addition to its extremely low coefficient of friction and self-lubricating properties which end oil contamination, "Teflon" has the impact strength to make an excellent bearing material. Its operating range extends from —450° F. to 500° F. No acids, alkalies or solvents commonly used in the textile field will attack it. And "Teflon" has zero water absorption —won't distort even under extremely humid conditions.

Has "Teflon" tetrafluoroethylene resin a place in your operation? You can obtain complete property information on this remarkable engineering material—simply clip and mail the coupon on the left.

This washer of Du Pont "Teflon" tetrafluoroethylene resin needs no lubrication; can't cause yarn contamination.

## Investigate Du Pont engineering materials in your product development programs

One of the family of these versatile engineering materials is often a key factor in product improvement or new product design. The wide range of properties available with "Alathon"* polyethylene resin, "Lucite"* acrylic resin, "Teflon"* tetrafluoroethylene resin, and "Zytel"† nylon resin are helping solve industrial design problems.

**NEED MORE INFORMATION?** Clip the coupon for additional data on the properties and applications of these Du Pont engineering materials.

**E. I. DU PONT DE NEMOURS & CO. (Inc.) POLYCHEMICALS DEPARTMENT**
**Room 184, Du Pont Building, Wilmington 98, Delaware**
*In Canada: Du Pont Company of Canada, Ltd., P. O. Box 660, Montreal, Quebec*

*Please send me more information on the Du Pont engineering materials checked:* ☐ *"Zytel";* ☐ *"Alathon";* ☐ *"Teflon";* ☐ *"Lucite". I am interested in evaluating these materials for:*_____

NAME_____ POSITION_____

COMPANY_____

STREET_____

CITY_____ STATE_____

TYPE OF BUSINESS_____

*"Alathon", "Lucite", "Teflon" are registered trade-marks of E. I. du Pont de Nemours & Co. (Inc.)
†"Zytel" is the new trade-mark for Du Pont nylon resin.

fine adjustments, which allows the accurate determination of moisture in a 10-gram sample, from 0.1 to 100%.

Two additional slide weights are provided; one weight for the taring of containers weighing up to 45 grams and the second for taring 2-, 5- or 10-gram sample weights. (T-52)

### Breaker Enclosure

Nodular cast-iron enclosures for AB-I circuit breakers in hazardous locations have been introduced by Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa. Weight has been reduced by 45% over conventional cast iron. (T-53)

### Ultrasonic Drill

International Electronics Corp., 81 Spring St., New York 12, N. Y. has announced the new Mullard 50-w. ultrasonic drill. This power tool produces a vertical reciprocating action to drill holes of any shape and complexity in hard and brittle materials such as glass, ceramics, germanium, tungsten, and titanium carbide. (T-54)

### Cooling Towers

A new Flow-Mizer line of cooling towers, with capacities from 15 through 100 tons at 75° wet bulb and a water-saving efficiency of up to 97%, has been announced by Acme Industries, Inc., Jackson, Mich. Centrifugal blowers are used to induce a constant velocity of air flow with capacity for use with ductwork if needed. (T-55)

### Retractable Caster Lock

A retractable position-lock for castered trucks has been introduced by The Bassick Co., Bridgeport 2, Conn. Designed for use with Bassick's 6- and 8-in. H99 Series of industrial casters, the new position lock offers 3¼-in. ground clearance when retracted (T-56)

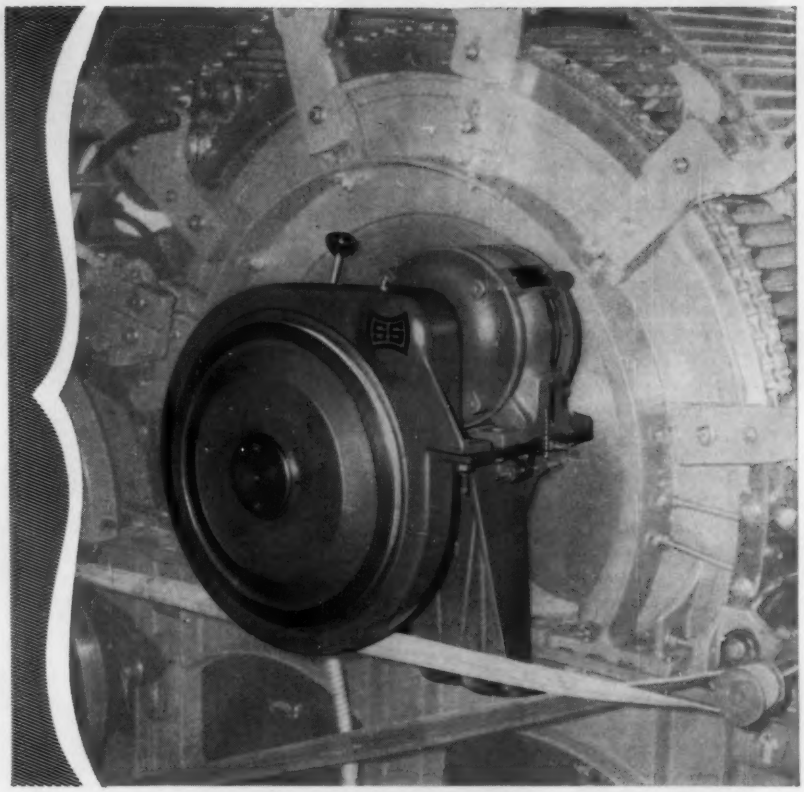
### Floor-Patching Material

A ready-mixed, instantaneous floor-patching material that can be subjected to heavy traffic immediately after application has been announced by Medal Brick & Tile Co., Wooster, Ohio.

Suitable for use in repairing concrete, brick mastic, or composition floors, the new material contains no asphalts, cements, or dehydrators and is chemically inert. (T-57)

### A.C. Motor

A new line of totally protected a.c.

SOUTHERN STATES MAKES POSSIBLE INDIVIDUAL CARD DRIVE BENEFITS WITHOUT CHANGES IN PROCEDURE

Your mill can enjoy the advantages of individual card drives *without changing carding or stripping procedures.* An EXCLUSIVE Southern States feature makes this possible. A standard-diameter grooved pulley, an integral part of the main drive, permits stripping in the usual manner. *No separate stripping device is needed.* The operation is simpler, quicker, and safer.

Important to cost-conscious mill men, the Southern States Individual Card Drive *meets both budget and operational requirements.* It is priced low enough to justify the elimination of card room lineshafting and belting with their inherent hazards and headaches.

It is a packaged unit, easily and quickly installed. Mounts direct to card frame. No complicated reduction unit or overhung load on cylinder shaft. Occupies about the same space as flat-belt drive. Leaves flats clear and eliminates danger of springing arches or damage to flats due to vibration.

Write for our Bulletin No. 200, or get the facts from your nearest Southern States representative.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

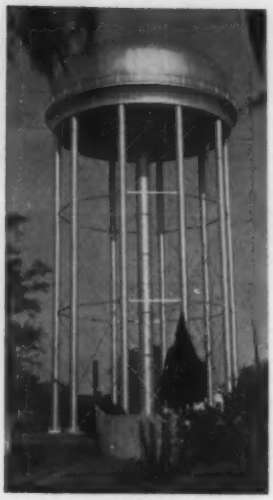



For more information, write direct or use Reader-Service post card.

# TANKS AND VESSELS FOR THE TEXTILE INDUSTRY

● COLE builds elevated tanks and vessels to your specifications — dye-vats, kiers, starch-kettles, acid tanks, jib-boxes, or other processing vessels for the finishing and dyeing industry . . . in stainless steel, nickel-clad steel, or of standard steel lined with Monel metal.

Our long experience in the design and fabrication of vessels for the textile industry may be of help to you. Write for latest COLE catalog—*Tank Talk.*



*Established 1854*

R. D. COLE Manufacturing Co., Newnan, Ga.

- TANKS
- TOWERS
- CYLINDERS
- VESSELS
- STANDPIPES

# NON-FLUID OIL

TRADE MARK REGISTERED

## BRINGS COSTS *DOWN!*

**NON-FLUID OIL *stays* where applied—on roll necks of spinning frames. Dripping liquid oils rot roll covers and spatter goods. Therefore, you pay heavily for what you *don't* use.**

**NON-FLUID OIL stops this loss—saves oil and application costs—cuts down "seconds"—provides clean, dependable lubrication.**

**See NON-FLUID OIL on-the-job. Learn why 7 out of 10 mill men prefer it. Send for a free working sample.**

**NEW YORK & NEW JERSEY LUBRICANT COMPANY**

292 Madison Ave., New York 17, N. Y. Works: Newark, N. J.

SOUTHERN DISTRICT MANAGER: Lewis W. Thomason, Jr., Charlotte, N. C.
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*NON-FLUID OIL is not the name of a general class of lubricants but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.*


motors has been announced by Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio. Regardless of mounted position, the motor offers complete protection against drip, splash, and falling objects. Ventilation louvers are positioned high and dry in the end brackets. The frame extends beyond the coil heads to give full protection to the windings, an important feature when brackets are removed. (T-58)

### Industrial Fans

The Dracco Corp., Howard Ave., Cleveland, Ohio, has announced the availability of industrial fans formerly produced only as components of Dracco dust-control systems. These fans have uses in all types of industrial air handling. Capacities: 500 to 46,000 cu. ft. per min. (T-59)

### Centralized Thermometer

The Alnor distance-reading thermometer, developed by Illinois Testing Laboratories, Inc., 420 N. LaSalle, Chicago 10, Ill., is a compact panel instrument that brings up to 50 temperature readings—fluids, process atmospheres, wet- and dry-bulb readings, etc.—from scattered locations, up to 1,000 ft. away, to a central point. Ranges: 100 to 400° F. (T-60)

### Rotating Union

Deublin Co., 1155 Waukegan Rd., Glenview, Ill., has developed a new line of compact rotating unions, having less overhang, for water and steam service to 300° F., and for cooling and heating rotating shafts, drums, and cylinders. Component parts are alike for ½- and ¾-in. service, with the exception of the rotors. (T-61)

### Valve Packing

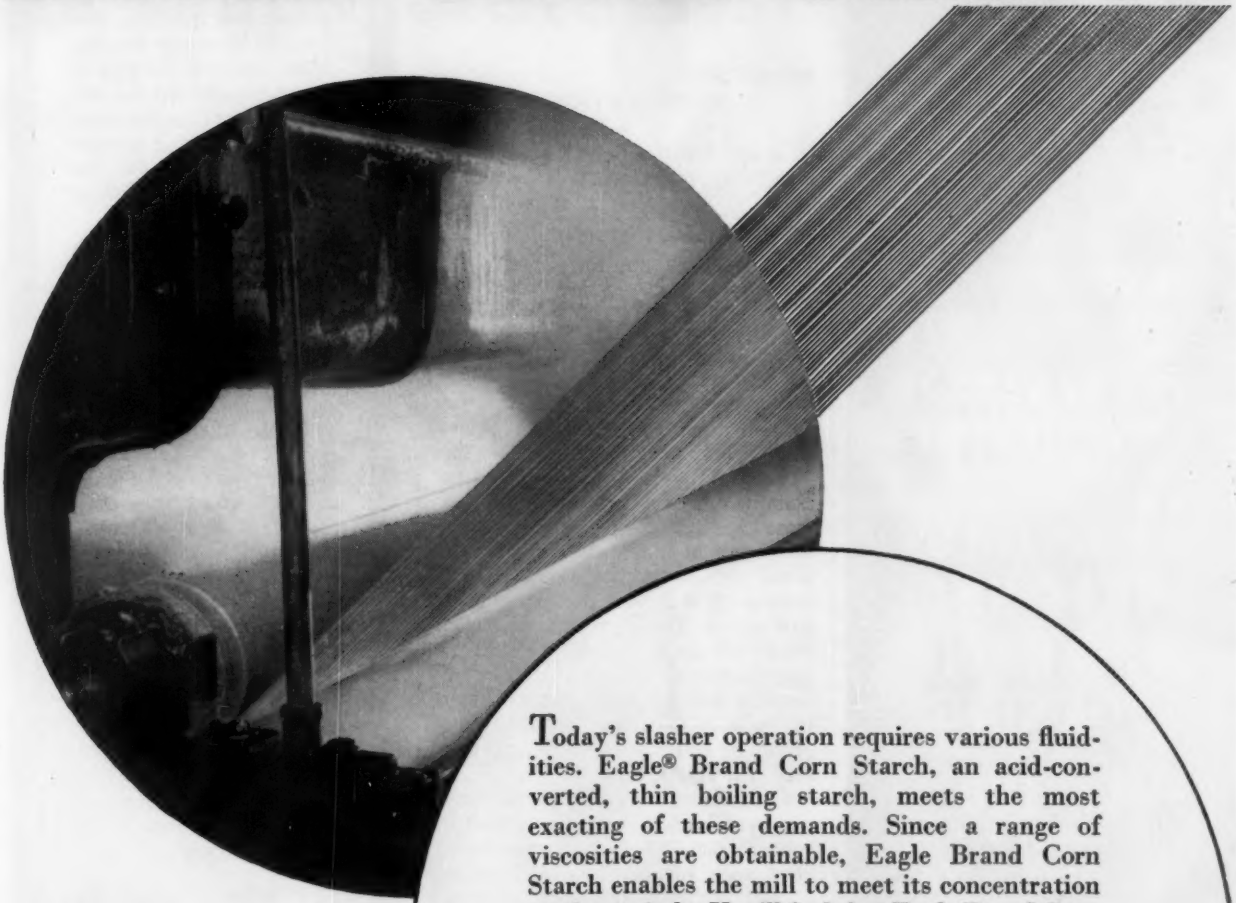
A new Teflon yarn packing designed to function at high peripheral speeds has been developed by Crane Packing Co., 1800 Cuyler Ave., Chicago, 13, Ill. It is tightly braided by a special process to provide density and firmness, and it can be impregnated with lubricating material. Available sizes are ⅛ through ⅝ in. in 1/16-in. steps. (T-62)

### High-Strength Tapes

Glass-reinforced polyethylene tapes with unknown industrial possibilities for reinforcing and sealing uses are available from Minnesota Mining & Mfg. Co., St. Paul, Minn. One is pressure-sensitive and the other is heat-

# *Get more uniform sizing of cotton yarns with...*

# EAGLE CORN STARCH



Today's slasher operation requires various fluidities. Eagle® Brand Corn Starch, an acid-converted, thin boiling starch, meets the most exacting of these demands. Since a range of viscosities are obtainable, Eagle Brand Corn Starch enables the mill to meet its concentration needs precisely. You'll find that Eagle Brand Corn Starch will give you greater viscosity stability and uniformity than any other starch. Always available, we can fill any quantity requirement.

*"A complete line of starches from the world's prime producer of starch products."*

**Technical** mill and laboratory assistance is yours without obligation. We welcome an opportunity to help you solve your specific production problems. Write us.

**CORN PRODUCTS REFINING COMPANY**
**17 Battery Place, New York 4, N. Y.**

AT YOUR SERVICE

SPECIALIZED ENGINEERING

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WRITE TODAY. YOUR INQUIRY WILL GET PROMPT ATTENTION

HASKELL-DAWES MACHINE CO., INC.

2231 E. ONTARIO ST.
PHILADELPHIA 34
PA.

sealable. Both feature high tensile strength. (T-63)

### Tank Cleaner

A new tank cleaner that allows a high-pressure hydraulic jet to rotate in three dimensions has been developed by Sellers Injector Corp., 1607 W. Hamilton St., Philadelphia, Pa. Two powerful streams of hot or cold water, with or without detergents, are delivered over the entire inside surface of any shape of tank. (T-64)

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## POINTERS

CONTINUED FROM PAGE 157

on a skeleton report, may erroneously judge a foreman's action to be wrong.

### Words Mean Different Things To Different People

Another reason for divergent views of a foreman's actions is that the foreman and the expert may not really understand each other.

Specialists tend to develop and use vocabularies peculiar to their specialties. When they speak on their specialties to a layman (the foreman, for example), they don't make complete sense. What the expert said and what the foreman heard or thought he heard are sometimes very different matters. It is no rare occurrence for a staff man to find a program, as carried out by the foreman, to bear only slight resemblance to the plan he and the foreman had supposedly agreed upon. In such a case, the foreman may simply be doing what he thought they they had agreed upon.

Communications are made difficult also by failure to listen on the part of both parties. The expert may be so filled with his pet solution that he doesn't bother to listen to the problem. The foreman may be so filled with the problem that he doesn't hear the proposed solution.

In summary, the supervisor may disagree with others on the rightness or wrongness of his actions on the basis of a different view of what constitutes right or wrong, a different view of the problem, and a different view of the adequacy of answers. He can only try to learn some of the language of the experts and listen more skillfully so that he can understand them better. And he can hope that they, in turn, will understand him and listen to him and appreciate the human-relations skill he must put into practice in the solution of any problem in his department.

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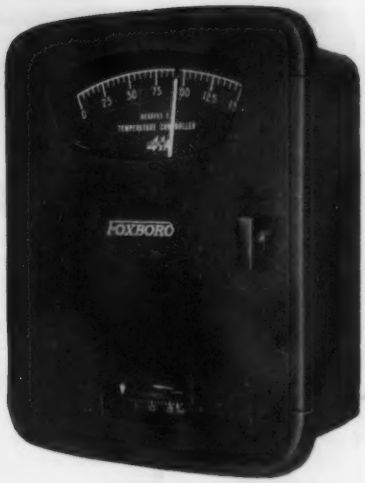
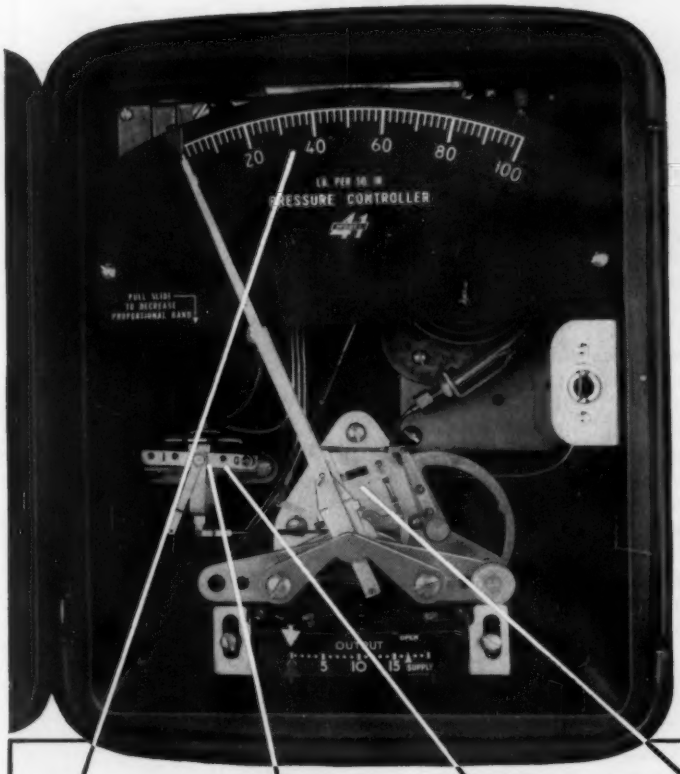
# Now!
# An even BETTER Controller for simple processes!




## ...the improved Foxboro M/41A Indicating controller




Here's the Foxboro Controller that proved itself in thousands of successful applications throughout industry! Now, with brand new design features, it's better than ever.

The M/41A Controller offers a new, snappy on-off action, or smooth proportional control action easily adjustable from .25% to 25%. It employs the famous M/40 controller movement — free from backlash, lost motion, and friction. This is a rugged, low-cost, compact controller using standard M/40 parts *throughout* . . . easy to get at . . . easy to service.

For control of simple processes—temperature, pressure, liquid level, or humidity — it will pay you to investigate the convenience and the precise, reliable performance of the Foxboro M/41A Indicating Controller. Write for Bulletin 5A-13.

### *New Design Features*

- Longer Scale — 5" effective length.
- Snappy "On-Off" Control Action on measurement change of only ⅛ of 1% scale.
- Alternate Proportional Action adjustable from ¼ of 1% to 25%.
- "Permaligned" Precision Controller Movement — Exclusive Self-Aligning Ball-Linkage—Non-Backlash Vernier Index Drive
- Simple Rugged Construction—All Parts Easily Accessible

THE FOXBORO COMPANY, 844 NEPONSET AVE., FOXBORO, MASS., U.S.A.

**FOXBORO** REG. U.S. PAT. OFF. **INDICATING CONTROLLERS**

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND

"TRAFFIC PANEL" TEST PROVES
DOLCOWAX
BEST FOR
LONG-LASTING FLOOR BEAUTY!

THE TEST—four sections of flooring, each panel prepared with a different floor wax. All panels subjected to heavy traffic . . .

THE RESULTS—The DOLCOWAX panel retained markedly finer lustre—its beauty actually increased with wear—and it retained scuff and scratch resistance to a greater degree.

DOLCOWAX *premium quality* floor wax is most economical in the long run. Ideal for "second coating"—the second coat integrates with the first . . . no "crawling" or "puddling" to prevent an even, uniform film.

IMPORTANT: The slip-resistance feature built into DOLCOWAX permits a soft, lovely finish with safety protection! Has Underwriters Laboratories approval, of course.

When preparing floors for waxing, use CINDET, the Dolge all-purpose cleaner, for more complete stripping of old wax film.

*Write for literature; consult your DOLGE Service Man on your floor finishing problems.*

FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

dependable
DOLGE
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Got A Problem with Winders?

We're As Close As Your Mail Box!

Simply send us a small supply of your yarn and we will wind and return to you with Test Wind Report and Catalog. You'll find that the Lazenby Winders made precisely to exacting requirements for your particular operation will give you uniformity as well as maximum yardage.

F. A. LAZENBY Co.
3106 ELM AVE.
Baltimore 11, Maryland

# MILL MAINTENANCE

## How To Keep Plant Power Factor High

Most industrial-plant power is supplied by a.c. systems. The term "power factor" enters into practically all considerations of a.c. machinery and circuits. Power factor is the factor by which volt-amperes must be multiplied to find actual power in watts.

In induction motors, the power factor not only varies with the horsepower and synchronous speeds of the motors but also with the loads on the motors.

### How Low Power Factor Hurts

Low power factor is detrimental for four important reasons:

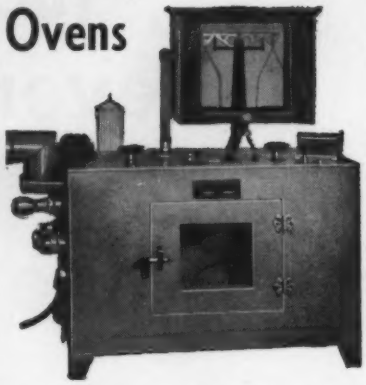
1. It prevents the full utilization of the generation and distribution system. The ratings of generators, transformers, transmission lines, feeders, and switches are limited by their current-carrying capacity, and the maximum power (kilowatts) that they may carry is proportional to the power factor. Thus, capital investment per kilowatt of load increases as the power factor decreases.

2. It makes each kilowatt of power carry a higher burden of line losses. The resistance losses, being proportional to the square of the current ($I^2R$), vary inversely as the square of the power factor. Losses are therefore equivalent to an increase in the kilowatt load, and they increase the cost of delivering power to the utilization equipment.

3. It may cause an excessive voltage drop at the power-utilization equipment and may possibly affect production by reducing starting torque in motors; this causes subnormal lighting and slows up the operation of heaters.

4. It may increase the purchased-power costs by incurring power-factor penalties. The detrimental effects of low power factor make it necessary for utilities to incorporate power-factor clauses in rate schedules. The power customer benefits by substantial power-bill reductions when he keeps the power factor of his plant high.

Textile Testing Ovens

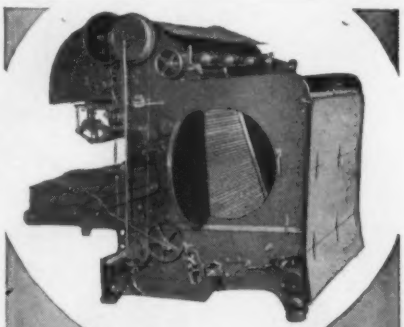


For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 3" baskets, may be changed to 6 baskets, 4¼" x 4¼" both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work. Write for details on EMERSON OVENS to fit your process.

EMERSON APPARATUS CO.
177 Tremont St. Melrose 76, Mass.



Specify Harwood Aprons for BRAMWELL® FEEDERS

Geo. S. HARWOOD & Son
50 Lagrange St., Worcester 8, Mass.

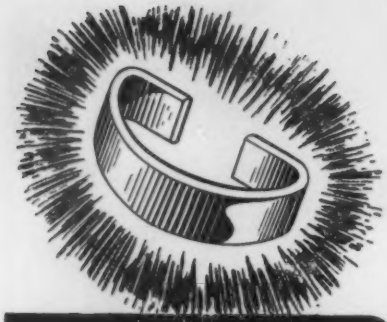
## "This solution satisfied the Safety Engineering Department..."

A leading carpet manufacturer in the Philadelphia area was faced with a serious problem — oil slick floors caused by lubricant leakage and throw-off. The Safety Engineering Department issued frequent warnings about dangerous conditions near the looms. Both conventional and special-purpose lubricants were tried but they either did not do a proper lubricating job or failed to stop the leakage.

When Sinclair Lubrication Engineer Harry Donovan was called in, he spent several days observing operating conditions. "Then," he reports, " I recommended Sinclair NO DRIP. I reasoned that Sinclair NO-DRIP was the right oil for this job because it is a high quality lubricant *especially fortified with Sinclair-developed additives to eliminate leakage and throw-off*. A trial period proved this recommendation entirely solved the problem. Soiled, slippery floors were eliminated and oil consumption was cut. What's more, Sinclair NO-DRIP Oils' superior lubricating qualities decidedly lengthened bearing life."

# SINCLAIR LUBRICANTS

Why not let a Sinclair Lubrication Engineer help solve *your* lubrication problem? *There's no obligation.* Contact your local Sinclair office or write Sinclair Refining Company, 600 Fifth Avenue, New York 20, N.Y.



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Our specialty is making Dary ring travelers — an item well and favorably known to the textile trade for more than half a century. Though times change, we at Dary hold to one course without deviation. We continue to serve, by pursuing our specialty.

When you need ring travelers, call on our experience to aid your choice. Consult your friendly Dary representative!

*Always specify*
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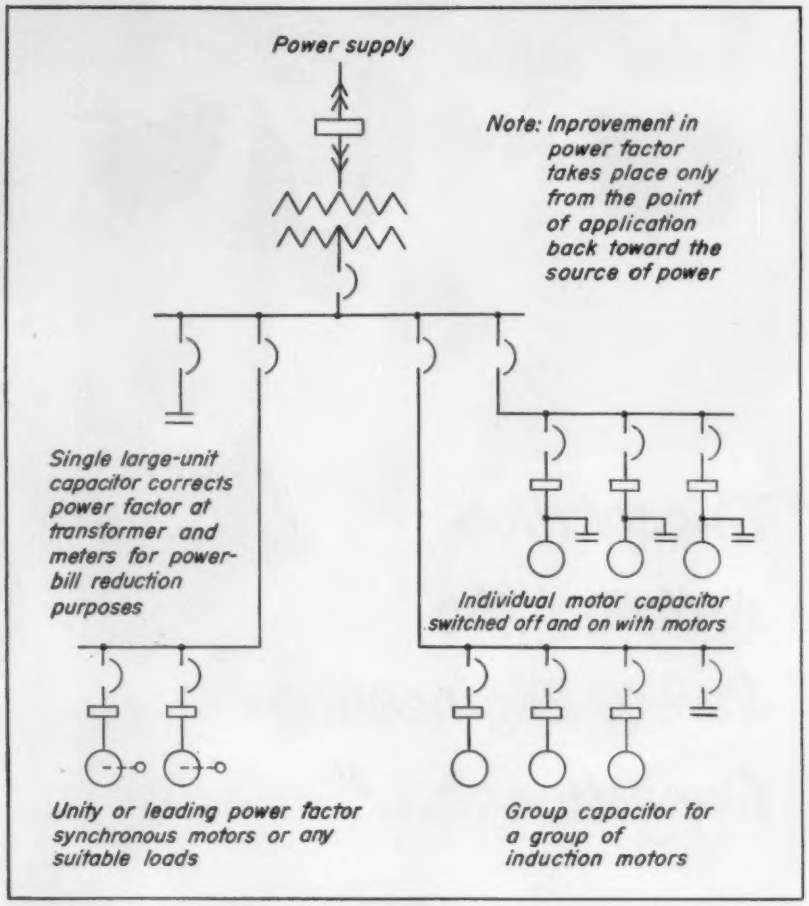
Power supply
Note: Inprovement in power factor takes place only from the point of application back toward the source of power
Single large-unit capacitor corrects power factor at transformer and meters for power-bill reduction purposes
Individual motor capacitor switched off and on with motors
Unity or leading power factor synchronous motors or any suitable loads
Group capacitor for a group of induction motors

**POWER-FACTOR IMPROVEMENT** comes from the principal types of apparatus.

### How To Improve Power Factor

High power factor is achieved by making the ratio between the kilowatts and kva. of the a.c. circuits as nearly 1:1 as possible. Several means for improving the power factor of an industrial plant are available; the following are the most important:

1. Minimize the reactive kva. component. This is a preventive method, such as avoiding oversize or low-speed induction motors and keeping induction motors as fully loaded as possible.

2. Eliminate lagging reactive kva. Many motor drives permit synchronous motors to be used, and they require no reactive kva. from the line.

3. Offset lagging reactive kva. with leading reactive kva. by using (1) leading power-factor synchronous motors, (2) capacitors, and (3) synchronous condensers. *Plant Engineering Handbook, McGraw-Hill Book Co.*

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## MAINTENANCE PROBLEMS

CONTINUED FROM PAGE 108

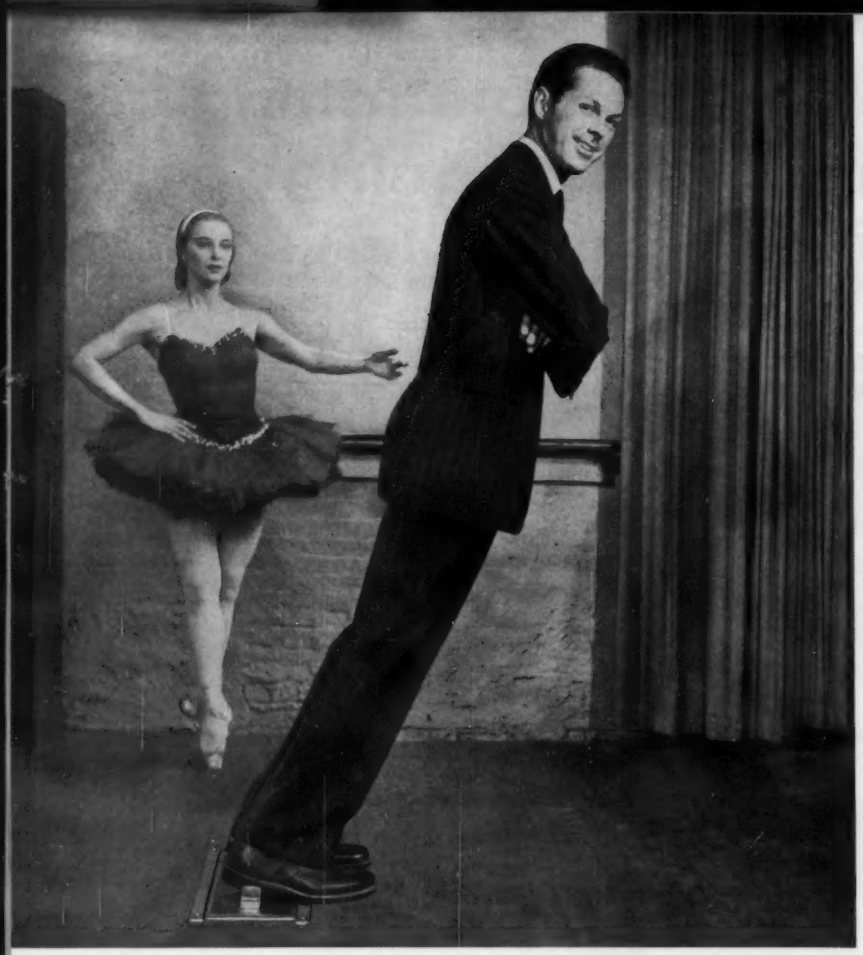
points. About 10 spinning frames are torn down and inspected at a mill containing, say, 120 frames at an inspection period. The frames are checked at random.

Looms, for instance, and other machines are inspected much the same way. There's a checklist and a demerit-system setup for each type of machine.

At the end of an inspection cycle, the total machines inspected at each mill are checked with those inspected at all other mills to make comparisons of the condition of machinery at each mill. As an example of the effectiveness of the system, one mill with relatively new spinning frames was in first place in the point system at the end of the first inspection period. The engineer at this mill didn't push his preventive maintenance schedule; and at the end of the next inspection cycle, his mill was in sixth place.

When the standard physical condition for a card, spinning frame, loom, or other machine has been established, production section men are required to bring their machines up to the set standard.

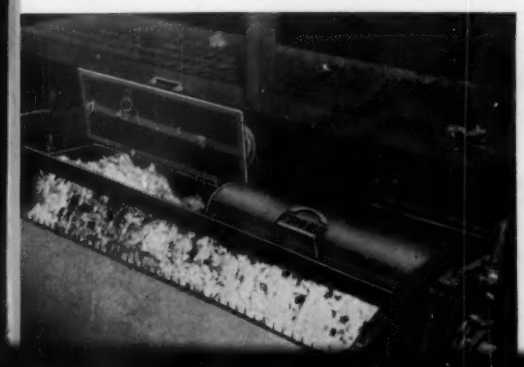
The inspection program also in-

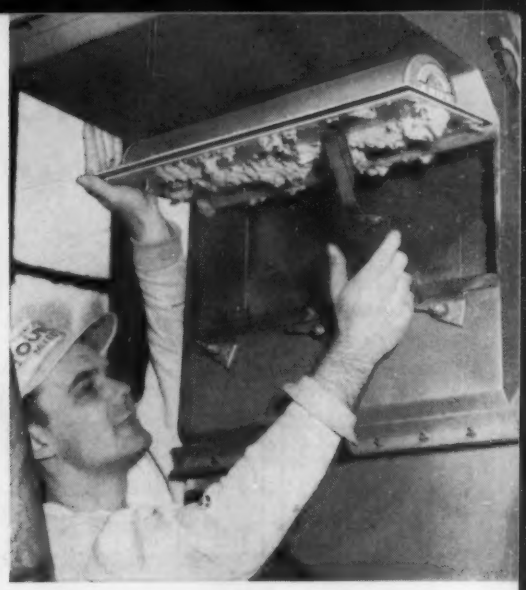


**NOT NAILED TO THE FLOOR!** Here's an idea for publicity men who used to create "gag shots" by nailing down shoes. Just use a piece of iron on the heel of the shoe and an Eriez Magnet set in the floor. To textile men, however, this demonstrates another idea — powerful magnetic action which can quickly be put to work pulling dangerous tramp iron out of processing lines in cotton, woolen, rayon and waste mills . . . tramp iron which causes fires, machinery damage and loss of production. *All Eriez Magnets are non-electric, self-contained. They operate without wires or attachments. Best of all their magnetic power lasts a lifetime. The first cost is the last.*

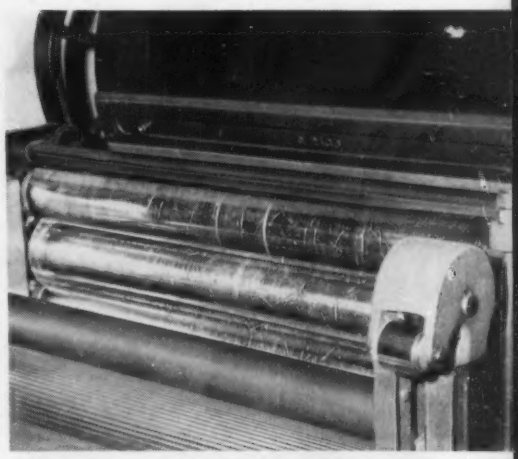
# MAGNETIC IDEAS FROM ERIEZ

**ERIEZ SPIKED APRON MAGNET PREVENTS FIRES.** Designed especially for textile use, these magnets pull dangerous tramp iron from material moving in processing lines in cotton, waste and woolen mills. Reports show that equipment protected by these magnets extends card and garnett clothing life four and five times. More important is the added benefit of Eriez Permanent Non-electric Magnets as a means of fire prevention, by removal of tramp iron. Eriez Spiked Apron Magnets are so efficient they bear the Associated Factory Mutual Stamp of Approval. A recent survey showed that *9 out of 10* mills preferred to equip with Eriez Permanent Magnets. Want more information? . . . request Bulletin 563.





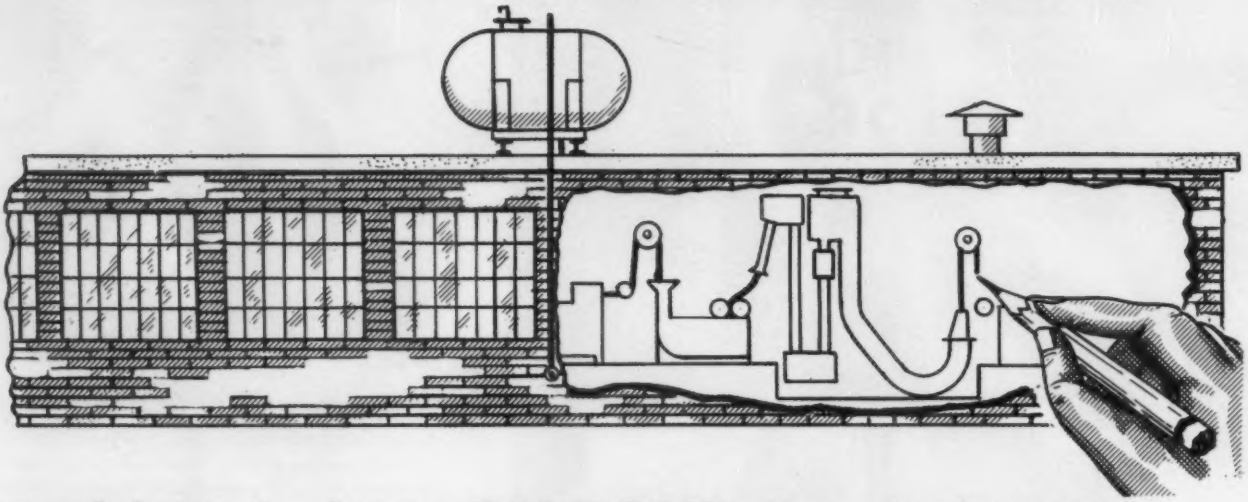
**NO METAL MEDDLES IN THIS COTTON LINE.** Whitney Cotton Mills, Inc., Hamden, Conn., found that an inexpensive Eriez Magnetic Hump was the solution to dangerous fires and costly machine damage caused by tramp iron. The magnet, designed to remove nails, wire, pins, etc., from cotton tailings used for furniture backing, is located in the pneumatic line between a picker and condenser. Previously, tramp iron did extensive damage to garnetts and caused considerable downtime. Since installing the Magnetic Hump, production has increased, downtime has been eliminated, and an annual repair saving of approximately $3,000 for each of three garnetts has resulted.



**THE WOEFUL ROLE OF PICKER CALENDER ROLLS.** When's the last time you checked your calender rolls? Did they look like those above . . . damaged by pieces of stray metal that left lasting impressions, and also damaged lickerin and card clothing? Chances are, your own equipment has also suffered because of spikes from aprons, ring travelers, nails, screws, bottle tops, etc. But now you can prevent machinery damage, reduce downtime, and eliminate poor card performance with an Eriez Permanent Non-electric Magnet. Why not invite an Eriez representative to look at your equipment? He'll be glad to survey your plant and recommend one of the many Eriez Magnets designed specifically for the textile industry.

***Eriez "Magnetic Ideas" can help you. Eriez' factory-trained field men, backed by Eriez' laboratory and engineering know-how, will be happy to study your particular problem, make a plant survey and offer helpful "Magnetic Ideas." Write or call Eriez Manufacturing Company, 101R Magnet Drive, Erie, Pa.***

# Faster, more efficient bleaching starts with expert planning...



## and here's how DU PONT can help you with its SPECIAL MODERNIZATION SERVICE

When you plan an expansion or modernization with Du Pont's help, you can be sure that every significant detail of your bleaching operation will be expertly evaluated.

With your production requirements in mind, experienced Du Pont technicians will survey your present equipment and bleaching method. Using this information as a base, a group of specialists will then work-up a detailed recommendation. It will show you how you can reach your new production goals, economically and without a waste of valuable floor space.

If new equipment or extensive modifications are needed, a proposal and layout will be presented for your consideration. Du Pont will even help you put your final plan into operation and guide you in the training of operators.

Here are some of the other services offered to you by Du Pont.

**On-the-Spot Help** with any immediate bleaching problem from Du Pont textile specialists servicing all important textile centers.

**Technical Literature.** A wealth of up-to-date information on all phases of textile bleaching is always available from Du Pont at your request.

**Confidential Bleachery Survey** to help you in maintaining or improving efficiency of your bleaching operation. A confidential report summarizes results and makes recommendations for your guidance.

**Peroxide Bleaching Systems.** More Du Pont peroxide bleaching systems are in use throughout the world than any other continuous system. We can show you how these processes can be adapted to *your* bleaching needs.

**Bulk Storage Systems.** Technical help with installation of equipment for buying and storing hydrogen peroxide in money-saving tank truck and tank car lots.

**Top-Quality Hydrogen Peroxide.** You're assured of prompt, dependable delivery of "Albone" hydrogen peroxide—in drums, tank trucks, and tank car lots.

For full details, call your nearest Du Pont representative or write to: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Del.

**CALL DU PONT FOR HYDROGEN PEROXIDE AND A *COMPLETE* TEXTILE BLEACHING SERVICE**

**ALBONE**

REG. U.S. PAT. OFF.

**HYDROGEN PEROXIDE**

DU PONT

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In Boston, call Hancock 6-1714; in Charlotte, Franklin 5-5561; in New York, Longacre 3-6440; in Philadelphia, Kingsley 5-1900.

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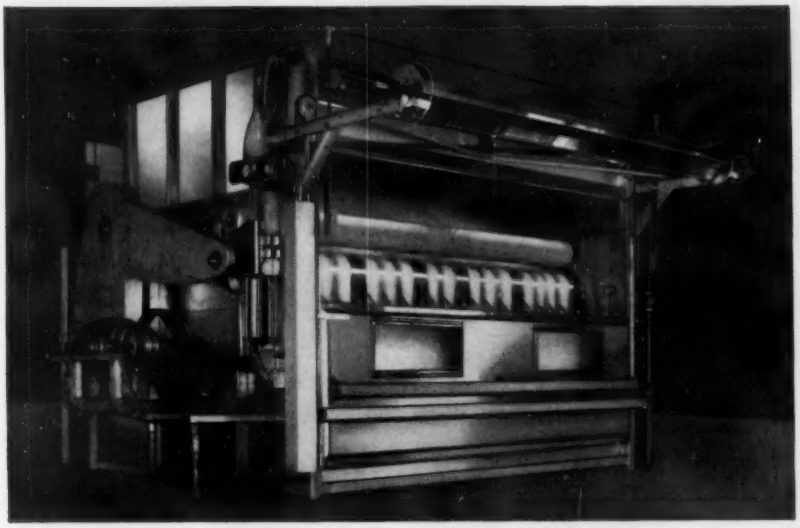
Export Division, Wilmington 98, Del.

*Barada & Page, Inc.

# The Fleet Line

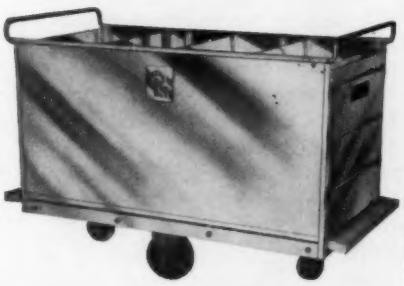
## Dye & Bleach Kettle : All Stainless Steel
## FOR COTTON KNITS



### FEATURES

- ✓ All Stainless Steel
- ✓ Triangular Folding Reels
- ✓ Rubber Squeeze Rolls
- ✓ Pneumatic or Spring Top-Roll Pressure
- ✓ Liquor-Level Controls
- ✓ Individual Motor Drives
- ✓ Electric Knock-Off
- ✓ Exhaust Control
- ✓ Full Enclosures
- ✓ Down-Sliding Doors

One of Many Mill Installations Producing Knit Goods for the Industry.



An all S. S. Truck to service these machines. Suitable for turntable use in removing twist from fabrics.

## RIGGS AND LOMBARD INC.

**FOOT OF SUFFOLK STREET, LOWELL, MASS.**

Agents: Paul A. Merriam Co., 1491 Broad St., Prov., R. I.
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A. Harold Zayotti, Jr., P. O. Box 125, Riverton, N. J.

*at the frontiers of progress you'll find . . .*

***IMPROVED WITH***

# VINOL

***(POLYVINYL ALCOHOL)***

Your product will enjoy wider acceptance for better sales and increased profit when you use Colton VINOL Polyvinyl Alcohol. New products and applications are also possible with this water-soluble, film-forming resin.

Let Colton—a dependable source for quick delivery—show you how Adhesive, Plastic, Textile, Paper and Packaging applications can benefit from VINOL Polyvinyl Alcohol. Rigidly controlled for uniformly high quality. Free-flowing and fast-dissolving—white and non-gelling.

For samples and information write Department 383

**SPECIFICATIONS**

VINOL Polyvinyl Alcohols now available in following grades:

PA-5, PA-20, PA-40
(88% hydrolyzed)

Low, medium and high viscosity partially-acetylated grades

FH-100, FH-400, FH-500, FH-600
(99+% hydrolyzed)

Low, medium and high viscosity fully-hydrolyzed grades

**COLTON CHEMICAL COMPANY**

**A Division of Air Reduction Co., Inc.**
**1543 East 18th Street • Cleveland 14, Ohio**

**Sales Offices and Warehouse Facilities also in New York City, Chicago, Spartanburg, Dallas, Seattle, Portland, San Francisco, Los Angeles**

cludes buildings, air-conditioning equipment, boilers, and other equipment that's always been the responsibility of the plant engineer.

The inspections were started two years ago and have gradually increased in scope. The machine shops of the mills have more work to do than before the program started because more machine parts have to be repaired, metallized, etc. To offset the increased shop work, pinion gears and other small parts formerly made in the mill machine shops are now bought from commercial machine shops.

The advantages of the program are:

1. Production machinery is constantly kept in good mechanical condition. When inventory is taken at the end of a fiscal year, no false profits are shown because all machinery is as good mechanically as it was at the beginning of the year.

2. The time of production workers is fully utilized. Because looms, for example, are in good mechanical condition, loomfixers don't have to make several trips to the same loom to fix a breakdown. And production loomfixers are the ones who keep the looms in good condition.

3. The inspections result in lost production, of course, while the machines are shut down; but the general increase in plant production as a result of better-running machines more than offsets the loss; so there's a slight overall gain.

4. The program demands the attention of management and helps the engineer get the equipment and labor needed to keep the entire mill in good condition.

### When To Maintain Motors

Much of the time given to the discussion of maintenance of electrical equipment was spent in discussing electric motors.

The first comments on this subject by a mill engineer were: "Loom motors that had been running four years without trouble recently began breaking down. We spot-checked several motors and tore them down. The grease was flaking, and failure seemed imminent.

"The motor bearings were sealed on one side, and there was no place to grease the bearings. The condition of the grease indicated that the wrong grease was used in the motors originally.

"We are just finishing tearing down and rebuilding all the loom motors. The bearings are washed in a solvent, and bad bearings are replaced. Windings are treated if they need it; they're given two coats of insulating enamel.

"Now that we have rebuilt the motors, we expect 10 years of life without lubricating or repairing them. We usually run motors until they fail; and then we put in new bearings."

A second engineer said: "We have used hundreds of 10-hp. motors on spinning frames for as long as 18 years without trouble. We pulled down a few motors once to inspect them, and they were in such good condition we put them back together without working on them. We have run motors for as long as seven years without greasing them.

### Preventing Motor Failures

"The two things that hurt motor bearings are: (1) dirt, and (2) heat from overgreasing or overloading.

"Loom-motor troubles come from loose motor pinions and not from bearings. If loomfixers fit the keys and pinions properly and keep the pinions tight, the troubles are eliminated.

"Loom motors and spinning-frame motors are entirely different, of course, and each must be treated differently."

The third engineer discussing motors said: "We have given all our loomfixers special training in removing, replacing, and setting motor pinions. Each loomfixer is furnished a gear puller and is required to use it to remove all pinions.

"New pinions, at speed changes, are fitted carefully to the pinion shafts and the keys. Motor gears are also set accurately to the loom-motor gears. Supervisors are checking all new pinions put on until they're sure each loomfixer thoroughly understands how to replace and set them."

Diehl transmitters for looms were discussed briefly. The discussion included:

First engineer—"We have added between 300 and 400 Diehl transmitters recently and, so far, have had no trouble with them."

Second engineer—"We have trouble with nuts in the transmitters working loose and falling in the motor and tearing it up.

"The alignment of the adjustments for the clutch gap is very critical; misalignment causes the pinion shafts to crystallize back of the pinion and shear off. Soon after speeding up a group of looms, we recently had as many as five pinion shafts break in a 24-hr. period."

The engineers are interested in centralized lubrication. It is being tested on looms, spinning frames, and machine tools at one mill. The advantages of centralized lubrication are (1) less machine downtime, (2) less labor, and (3) no contamination of products by oil.

The Oil-Mist type of centralized lubrication is preferred on many machines, particularly finishing machines.

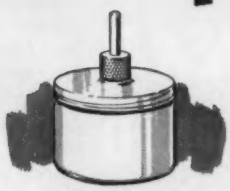
# You name it-MOYNO® pumps it!

**Foods**

Potato salad, chow mein, peas, cream-style corn, tomatoes, molasses, chocolate.

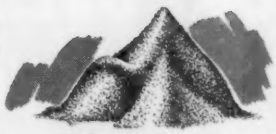
**Chemicals**

Caustics, acids, dyes, petroleum solvents, soaps, sludges, latex, synthetic resins.



**Pastes**

Paper coating, starch, seam paste, size, adhesive dope, heavy grease, graphite sludge.



**Abrasives**

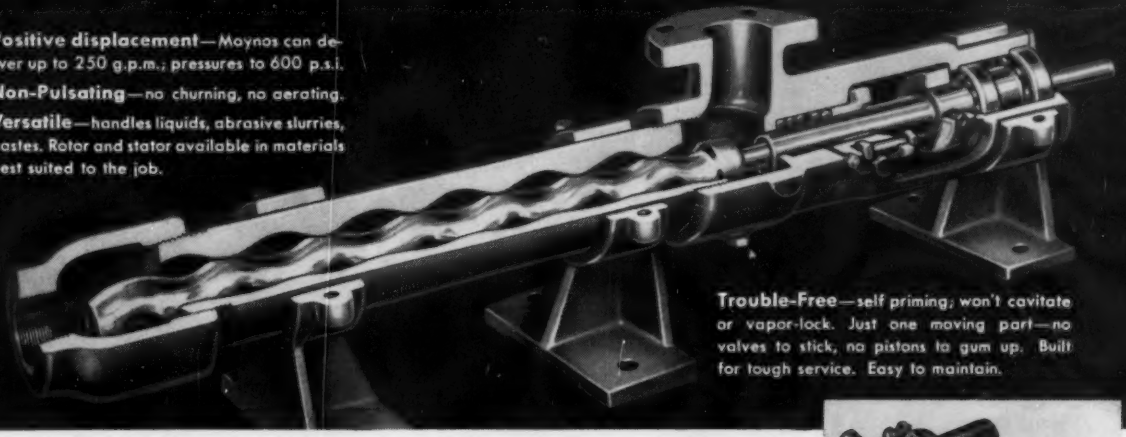
Insulator clay, frit, ground glass and water, porcelain glaze and enamel, cement, plaster.

## FEATURES OF THE MOYNO THAT MAY SOLVE YOUR MATERIALS-HANDLING PROBLEM

**Positive displacement**—Moynos can deliver up to 250 g.p.m.; pressures to 600 p.s.i.

**Non-Pulsating**—no churning, no aerating.

**Versatile**—handles liquids, abrasive slurries, pastes. Rotor and stator available in materials best suited to the job.



**Trouble-Free**—self priming; won't cavitate or vapor-lock. Just one moving part—no valves to stick, no pistons to gum up. Built for tough service. Easy to maintain.

## *R & M Moynos handle almost anything that can pass through a pipe*

The Moyno is a problem-solving pump. And whether your problem is one of materials, maintenance or flow, there's a better-than-even chance that the Moyno is the pump you're looking for.

Here is a completely different kind of pump that handles almost anything that will push through a pipe, from free-flowing liquids to non-pourable pastes—even materials containing relatively large particles or abrasives.

This is how the Moyno works: a screw-like rotor turning within a double-threaded stator creates cavities which *progress* toward the discharge end of the pump, carrying the material being handled. The result is a smooth, steady flow, free from pulsation and turbulence.

The pumping elements of the Moyno are available in a wide range of materials, depending upon the substances to be pumped. From stainless steels and synthetic rubber to tool steels, bronze, plastics—there is a Moyno that will do the job you want, and do it with remarkable efficiency.

Industrial-type Moynos are available with capacities to 250 g.p.m.; pressures to 600 p.s.i. Small Moynos (see inset), used as original equipment, serve on washers, water pumps, sprayers, and many other products.

**FREE...**

***this informative bulletin***

Tell us your pumping problem—let's see how the Moyno can help solve it. If necessary, we'll be glad to run tests for you in our own laboratories. In any case, get the details on the Moyno—mail the coupon below.

**ROBBINS & MYERS, INC.**

SPRINGFIELD, OHIO • BRANTFORD, ONTARIO

Fractional and Integral HP Motors

Desk, Window, and Household Fans

Hoists and Cranes

Moyno Pumps

Propellair Industrial Ventilating Equipment

Robbins & Myers, Inc.
Pump Division, Springfield, Ohio (TW)

Please send Bulletin 30C on Moyno Pumps

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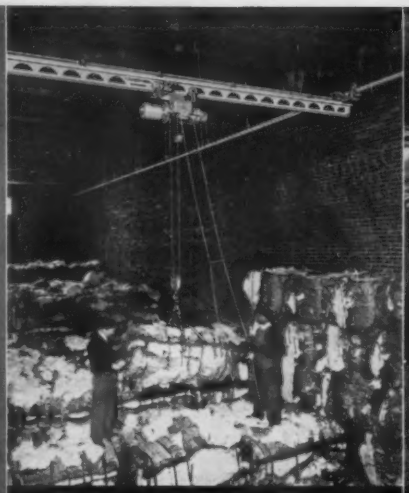
*Company*_____

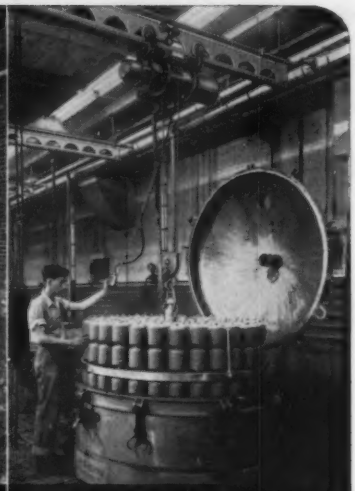
*Address*_____

*City*_____ *State*_____

# TO CUT OVERHEAD GO OVERHEAD with CLEVELAND TRAMRAIL

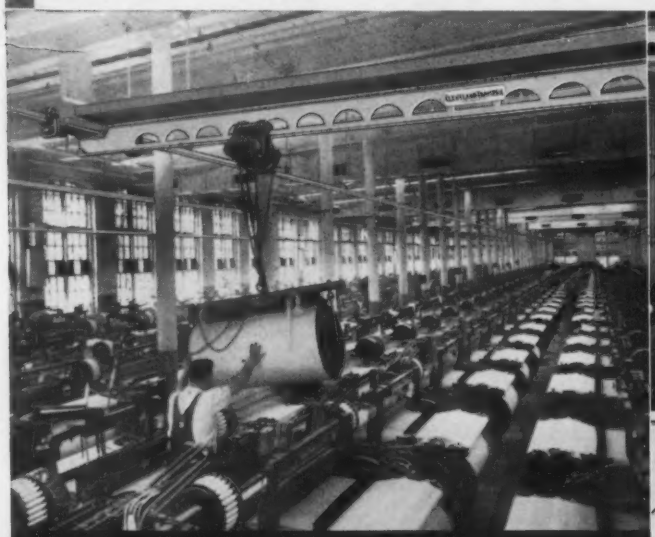


**BALE HANDLING**—Pile them higher, easier. Store more. Save aisle space.



**PACKAGE DYEING**—Heavier loads with more packages quickly handled by one man.

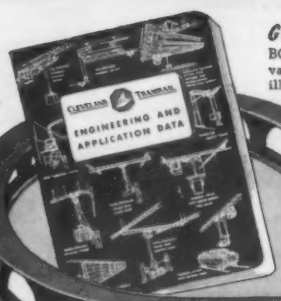
Are you enjoying the many benefits that Cleveland Tramrail material handling equipment can provide? Hundreds of textile mills, large and small, are. We know of no other equipment that pays for itself so quickly. Why not get the facts? A Cleveland Tramrail representative will be glad to discuss textile handling with you, without obligation, of course.



**BEAM HANDLING**—Handle larger beams, faster. No floor interference. Space looms closer.

**CLOTH HANDLING**
Use floor area for production, not aisleways. Cut cloth handling time.

**AUTOMATIC DISPATCH**
Deliver materials between floors or buildings automatically. Cut costs.

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THE CLEVELAND CRANE & ENGINEERING CO.
8474 EAST 287TH STREET WICKLIFFE, OHIO

**CLEVELAND TRAMRAIL**
**OVERHEAD MATERIALS HANDLING EQUIPMENT**

# Ideal

The strength and evenness of sliver drafted on Ideal High Speed Ball Bearing Drawing* is far superior to that produced on any other equipment. Mill records show an average of 8.7% greater breaking strength and over 33% less variation. These figures are of tremendous importance because you cannot correct a defect made in the drawing process.

*Ideal* Drawing is built on an entirely new principle. The stock is given only a light feathertouch as it runs through, automatically evening-out thick and thin places. Patented construction maintains this light feathertouch month after month . . . year after year . . . without adjustments and without maintenance. What's more, Ideal Feathertouch Drafting cannot crush, bruise, or cut fibres, or damage stock in any way. Unequalled quality is only one of the many advantages of Ideal Drafting. Others are (1) greatly increased production per frame, (2) reduced operating and maintenance labor, (3) lower initial investment, (4) saving on floor space, etc.

*Call, write, or wire for full information.*

*Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending.

*Feathertouch*

DRAFTING

*Sets New Standards*

**Ideal Industries, Inc.**
**Bessemer City, N. C.**

"At home" on any job!

**TOLEDO No. 1-2-4**

**Power Pipe Machine**

*In Scarsdale, N. Y.*—John R. Philip, Inc., plumbing and heating contractors, converted this regular house trailer to a "pipe shop on wheels." Takes Toledo No. 1-2-4 to any job. Has gas engine generator—saves paying for pole line on job. Saves transporting the 1-2-4 to job and back to shop. Saves building a shanty—locks trailer at night. Also serves as office. Speeds up pipe threading anywhere!

**Compare EASE and SPEED**

**Threading ½" to 4" Pipe**

★ *Threads 2" pipe in 18 seconds, 3" in 30, 4" in 42.*

★ *Cuts off 4" pipe in 9 seconds,* with 4 high speed steel cutter knives, scroll fed.

★ *Instant size change . . .* separate quick-opening die head for each size pipe.

★ *High production . . .* reduces your costs! Order through your supply house.

THE TOLEDO PIPE THREADING MACHINE CO., TOLEDO 4, OHIO

"TOLEDO"

Pipe Threaders
Pipe Wrenches
Power Pipe Machines

*BUILDERS OF THE WORLD'S FINEST PIPE TOOLS*



CONTINUED FROM PAGE 111

**Versatile Power Saw**

Portable power band saw for cutting wood, metal, and all types of electric cables was demonstrated by Porter-Cable Machine Co., Syracuse, N. Y.

The saw is said to be so easily used it eliminates the need for hand hacksaws. It's also sturdy enough to supplement stationary equipment. Pipes extending through floors can be cut off ½ in. above the floor level. The tool weighs 16 lbs. and costs $215.

►A chain wrench with a ratchet action was shown by Reed Mfg. Co., Erie, Pa. The tool is valuable for getting into tight corners, close to baseboards, or between parallel lines. A 14-in. handle provides standard leverage for tightening pipe up to 2 ins.

**Vacuum Cleaner**

A vacuum cleaner consisting of a removable motor used with a 55-gal. drum to provide large storage capacity was shown by Breuer Electric Mfg. Co., Chicago, Ill. A special cover plate is provided that fits on any 55-gal. drum, and the company supplies a four-wheel dolly for easy portability.

►A lubricant for new bearing surfaces was shown by Tower Oil Co., Chicago, Ill. The oil, Miracle Micro-Moly, is said to stand up to 400,000-lbs.-per-sq.-in. pressure and does not change the tolerance or clearance required. It lubricates by filling in the pores of rough metal.

►A water pickup machine for drying floors was shown by Wells Research & Engineering Co., Des Plaines, Ill. The dryer has two independent rubber squeegee blades adjustable from 2- to 4-ft. widths. The tank holds 15 gals. of water. Removed from the frame, the dryer becomes a vacuum cleaner.

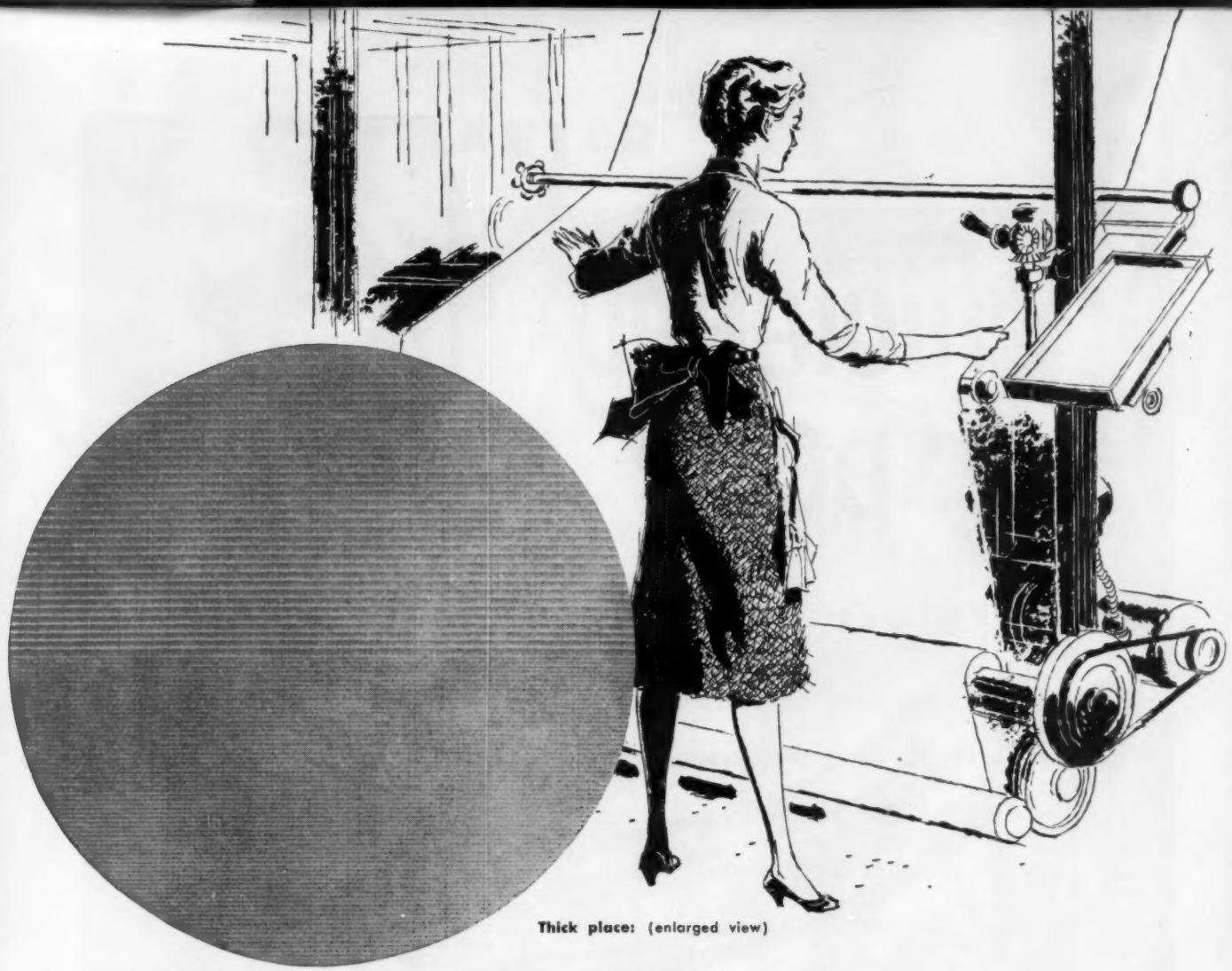
**Self-Contained Cables**

Cables were shown by The Okonite Co., Passaic, N. J. They're rugged and may be self-contained where a rigid-conduit system is not desired. They're designed for new industrial plants and also contain flexibility features that make them easily installed when existing electrical systems are modernized.

►A 16-in. power plane with a lever adjustment for easy cutter alignment was shown by Stanley Electric Tools, New Britain, Conn. The tool, powered by a ¾-hp. motor, can cut to a depth of 3/32 in. with a cutter 2 3/32 ins. wide. There is an easy, direct reading for bevel adjustment.

►The Burkay 718 water heater, shown by A. O. Smith Corp., Kankakee, Ill., produces 420,000 Btu. per hr. It is especially designed as a straight recovery heater and provides the desired volume of 140° F. water for most general requirements. Copper construction insures clean, rust-free hot water.

CONTINUED ON PAGE 242



Thick place: (enlarged view)

# Non-marking take-up roll covering helps prevent fabric defects like this

The Armstrong NO-732 Take-up Roll Covering helps prevent "thick places" because its high-friction surface grips the fabric firmly and maintains uniform take-up tension. Yet NO-732 is so remarkably smooth that it won't mark loom-finished goods or other delicate fabrics.

A special synthetic rubber gives NO-732 its combination of even take-up tension and non-marking smoothness. In addition, the synthetic's toughness assures you of long, economical service. NO-732's sturdy cloth backing gives it extra strength, too.

Make a quick test of the Armstrong NO-732 Covering right in your own office. Feel its smoothness. Rub it against any surface—your desk, your shirt, the cloth you weave—and see how little pressure you need to make NO-732 grip firmly. Then give NO-732 a real tryout on one of your looms. Call your Armstrong representative for samples of this material.

**For the booklet,** "Armstrong Textile Roll Coverings and Mill Supplies," write Armstrong Cork Company, Industrial Division, 6904 Dauphin St., Lancaster, Pa.

**Armstrong**

LOOM SUPPLIES

*. . . used wherever performance counts*

**Loom Clutch Discs and Inserts . . . made of cork to maintain friction even under oily conditions.**

**Loom Brake and Let-Off Strips. Plain or grooved, these cork-composition strips give long, efficient service.**

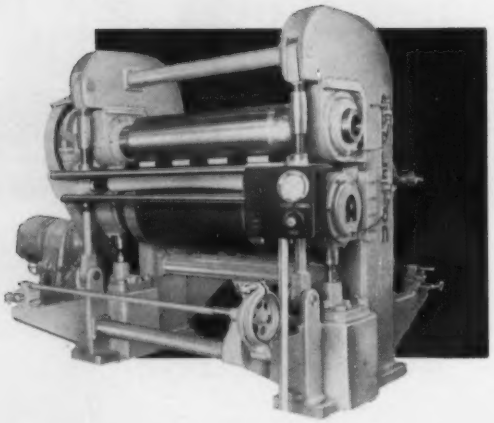
**Take-Up Roll Coverings. A full line in synthetic rubber, cork-and-rubber, plain, or gridded cork.**

**Temple Roll Coverings. Specify long-wearing Accotex® when you order temple rolls from your regular source of supply.**

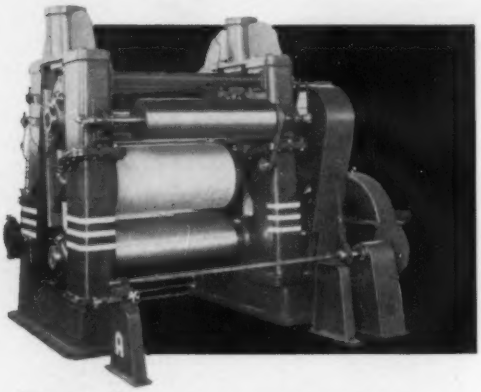
# 3 efficiency experts

## at Everglaze Finishing

Apply increased production and less maintenance to your everglaze operation with new Appleton Machine efficiency . . . that puts you ahead of competition . . . that protects your profits now and for years to come. Here are 3 ways to do it:



**1** An Appleton 2-roll, 50-ton Hydraulic Schreiner Calender gives goods a beautiful lustre at 40 yards a minute, 25% faster than most machines in use.



**2** The Appleton 3-roll, 50-ton Hydraulic Friction Calender irons the finest everglaze finish at 40 yards a minute, increasing output by 25%.

**3** The Appleton 20-ton Embosser imbeds the most meticulous or simplest design with equal ease and efficiency, at the standard 20 yards per minute.

ACCEPTANCE A ASSURED

**Acceptance Assured:** the invisible stamp of approval on every yard of everglaze finished goods that runs through modern, money-saving Appleton Machines. An Appleton man is as close to you as your telephone. Why not call 3-7361, or wire, collect at absolutely no obligation, today.

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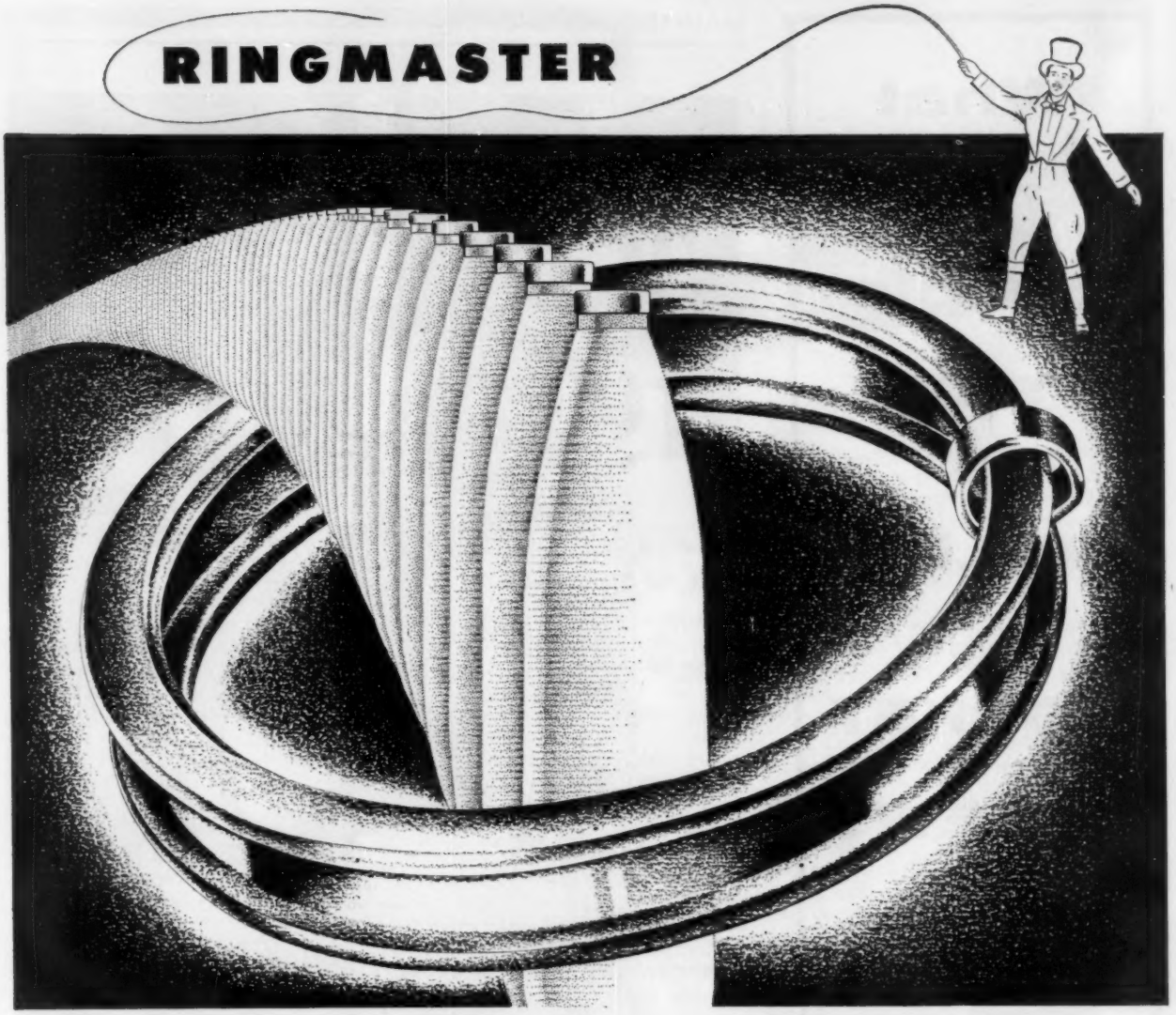
APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS • CALENDER ROLLS OF ALL KINDS

# RINGMASTER



## . . . of more than 12,000,000 smooth-running spindles!

TODAY, Victor Travelers ride the rings on more than 12,000,000 spindles, after 50 years of steadily increasing preference among the nation's ablest millmen. The reasons are clear.

First, consider cost. Since the true measure of a traveler's worth is in the number of pounds of yarn it spins or twists in its lifetime, millmen prefer those that *cost the least per traveler-pound.*

Victor Travelers consistently deliver more pounds of top-quality yarn — under the toughest conditions — at the lowest possible cost per traveler-pound.

Second, consider design. Whether a mill runs conventional fibers, synthetics, or blends, there is always one traveler that is *right* for the work being processed. Victor service saves you valuable time in selecting that *right* traveler — in setting up the smooth-running spinning or twisting desired.

You'll find that a mill-trained Victor Service Engineer has the ability to analyze problems quickly — to recommend the *right* traveler. Also, whatever its description, you can be sure its available among the more than 15,000 Victor styles and sizes.

One more reason . . . Victor service is prompt as well as dependable. Try it. Just phone, wire, or write the nearest Victor office.

*Keep a Step* *ahead with*

**VICTOR Ring Travelers**

**VICTOR RING TRAVELER COMPANY**

PROVIDENCE, R. I. . . . . 20 Mathewson St. . . . . Tel. Dexter 1-0737

GASTONIA, N. C. . . . . 914-916 East Franklin Avenue . . . Tel. 5-0891

 For more information, write direct or use Reader-Service post card. 

# What mill people say ABOUT ALLEN SOCKET SCREWS

"Sure we use Allen set screws because it is an additional safety factor. Using a lot throughout the mill—always ask for genuine Allens.

. . . PRESIDENT
North Carolina Mill
(name on request)

ALLEN
MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

### Truck for Tight Places

Baby fork lift truck, operated by any one of three methods—manual, electric, or battery—was shown by Allied Mfg. Co., Chicago, Ill.

The truck is said to be a natural for unloading, lifting, and stacking in narrow aisles or other hard-to-get-at places. Up to 500 lbs. can be lifted easily and quickly.

► A high-pressure pump that develops 40,000 psi. was shown by Blackhawk Mfg. Co., Milwaukee, Wis. The pump can be used for removing bearings from predrilled shafts by the oil-injection method and for special hydraulic systems.

### Lift Truck With Extendable Forks

A lift truck with forks that reach out to pick up and deposit loads was shown by Yale & Towne Mfg. Co., Philadelphia, Pa. The hydraulically operated forks slide forward to provide effective fork length for handling loads beyond the outrigger wheels. The forks are retracted to bring the load against the fork carriage for transportation.

### Quick-Loading Barrel Cart

Barrel cart is quick loading because it has a spring-actuated bar to slip a hook over the barrel edge as the truck is moved against the barrel. The barrel is automatically released from the hook when the truck is tipped forward and the barrel hits the floor. The truck is manufactured by Valley Craft Products, Inc., Lake City, Minn.

### Lightweight Hammer

A lightweight hammer powered by a 2,500-w. generator was shown by Homelite Corp., Port Chester, N. Y. The tool can drill, chisel, cut, roughen, ram, and vibrate. The same hammer can be used for both drilling and striking.

► Welding shields that are lightweight and portable were shown by Frommelt Industries, Dubuque, Iowa. An 18x36-in. shield costs $12.50; one 72x108 ins. costs $58.50. The shields are fire-resistant. They can be rolled for moving or bent to any shape when they're to be used. Textile applications are said to be isolating mill production machinery when portable welding is done.

CONTINUED ON PAGE 246

# Armour Energetic® cuts crocking and costs at Standard-Coosa-Thatcher..

## ..and will at your mill!

Standard-Coosa-Thatcher uses Energetic to minimize crocking on this naphthol-dyed yarn—and for maximum detergency and economy in other dyeing and bleaching processes.

"None of the synthetics had solved our crocking problem—until we tried Armour Energetic. That did it, and we've been using Energetic successfully in our dyeing and bleaching processes for the past three years." These are the words of Mr. H. H. Eagar, manager of quality control and development for Standard-Coosa-Thatcher Company. Energetic has proven itself in his mill and in many, many others—why not try it in *yours?*

**Here's how Energetic will cut costs for you!** A powerful, concentrated nonionic synthetic detergent, Energetic is supplied *90% active*—it takes only one pound to do the job of 3 full pounds of anionics. This adds up to a savings per job of about 21¢ with every pound of Energetic you use. And you can add builders to Energetic to cut costs even more.

**Test Energetic now by this trial-order plan!** Send the coupon for free test samples of Energetic and complete booklets on all three Armour Energetic products. Or, for quick delivery on a 5-gallon trial drum, place an order right in the coupon below. Start reducing your scouring problems and costs now!

**FREE SAMPLE AND TRIAL ORDER BLANK**

Armour Industrial Soap Department
Armour and Company, 1355 W. 31st St., Chicago 9, Ill.

Please send me:

☐ FREE! Sample of ENERGETIC
____ 5-gallon drums of ENERGETIC @ $13.86 each
☐ Free Booklet, ENERGETIC and ENERGETIC S
☐ Free Booklet, ENERGETIC W-100 (Instant wetting agent)
☐ Bill me ☐ Check enclosed ☐ Money Order

Your money back if not completely satisfied. For refund, simply ship us unused portion.

Name _____ Title _____

Firm _____

Address _____

City _____ Zone _____ State _____

ARMOUR

*Industrial Soap Department*

T4

*only*

# ECLIPSE BOBBIN HOLDERS

## OFFER THESE

# "BIG TEN" Features

1. Completely replaces wooden skewers.
2. Stainless steel ball bearings minimize friction, resulting in uniform quality of roving.
3. Permits less twist. Tests indicate yarn of more even texture.
4. Creel boards easily cleaned. Overhead suspension leaves open creels. Blowers more effective.
5. Better spinning of spun rayon.
6. Easier creeling; less physical effort and fewer motions required.
7. Improved brake attachment prevents over-run and backlash.
8. Now cadmium plated and stainless steel balls more rust resistant.
9. Time-tested product—holders in operation for over ten years.
10. Easy to install; practically no upkeep.

★ ★ ★

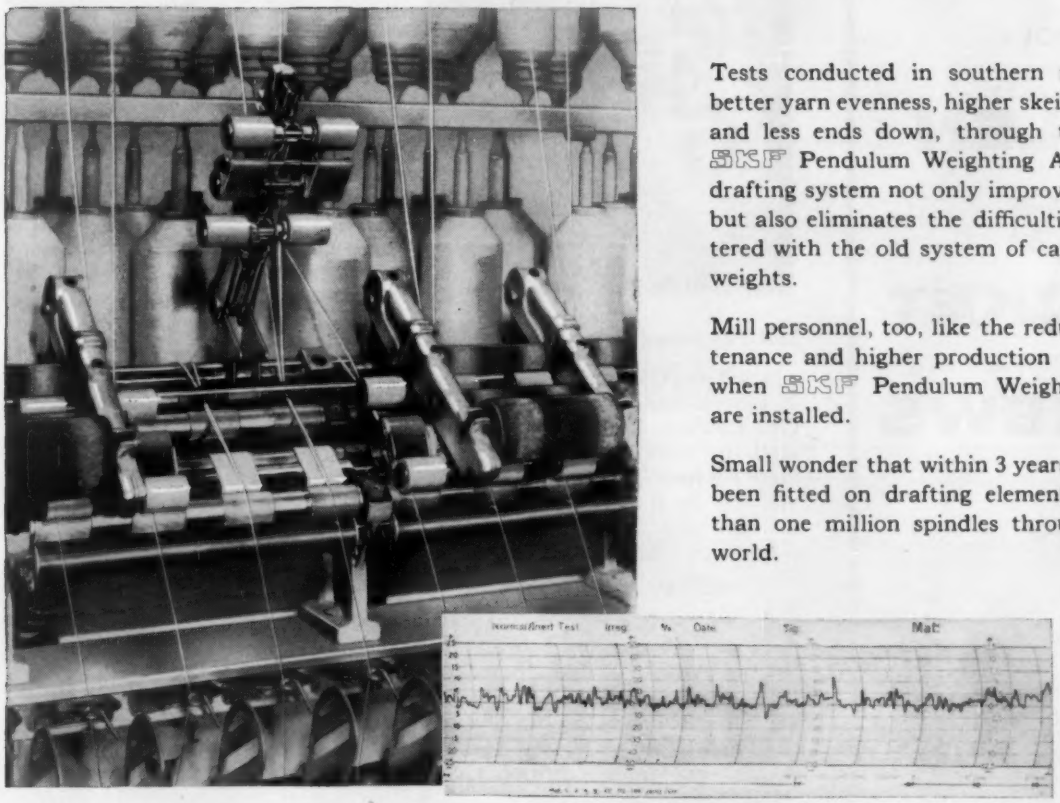
Textile men everywhere are concerned with efficiency and economy of operation, and that's just what these *exclusive* Eclipse features assure you! If you want to modernize your present plant equipment profitably, you can't go wrong with the finest—Eclipse Bobbin Holders. Write us for further details.

Export Sales: Bendix International Division, 205 East 42nd St., N. Y. 17, N. Y.

ECLIPSE MACHINE DIVISION of Bendix AVIATION CORPORATION
ELMIRA, NEW YORK

# YARN *Quality* IMPROVED

## by SKF Pendulum Weighting Arms



Tests conducted in southern mills show better yarn evenness, higher skein strength, and less ends down, through the use of SKF Pendulum Weighting Arms. This drafting system not only improves quality, but also eliminates the difficulties encountered with the old system of cap-bars and weights.

Mill personnel, too, like the reduced maintenance and higher production that result when SKF Pendulum Weighting Arms are installed.

Small wonder that within 3 years they have been fitted on drafting elements of more than one million spindles throughout the world.

### HERE ARE SOME ADVANTAGES OF SKF PENDULUM WEIGHTING ARMS

- Accurate alignment of top and bottom rolls due to the individual *pendulum* guidance of the top rolls.
- Accurate weighting, irrespective of the roll settings, because of individual weighting of the top rolls.
- Better drafting and simplicity of cleaning because of absence of weights, hooks, saddles and cap-bars.
- Quick and easy engaging and disengaging of the arm for maintenance of top rolls and aprons.
- Adjustable for all roll settings required in the mill.

**SKF INDUSTRIES, INC.,** PHILADELPHIA 32, PA.
*—manufacturers of* **SKF** *and* HESS-BRIGHT® *bearings.*
7413

SKF®
TEXTILE BEARING SPECIALTIES

**What mill people say**

ABOUT

**ALLEN**

ALLEN HEAD

**SOCKET SCREWS**

"Allen screws are much safer, wrench always fits and hits head properly, so there's no danger of slippage or skinned knuckles."

SUPERINTENDENT
North Carolina Cotton Mill
(name on request)

**ALLEN**
MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.




► A roller coater is said by the manufacturer, Fence Painter Corp., Chicago, Ill., to let one man paint a chain link fence for a total cost of 3¢ per sq. ft. You just dip the brush in a receptacle filled with paint and roll the paint on the fence. The price of a complete painting kit, including receptacle and 8-in. roller, is $17.50.

**Self-Propelled Scrubber**

A self-propelled scrubber was shown by Lincoln-Schlueter Floor Machinery Co., Chicago, Ill. The machine can scrub up to 15,480 sq. ft. of floor space per hour. Solution is automatically fed to the 18-in. brush. The machine also rinses, squeegees, and draws used solution into its self-contained tank.

► A portable steam cleaner that delivers a full-powered blast from the cleaning gun in less than 90 secs. from a cold start was shown by Hypressure Jenney Div., Homestead Valve Mfg. Co., Coraopolis, Pa. The cleaner sprays the work with a boiling chemical solution that has five times more hitting power than a stream of plain water at the same gauge pressure.

► La-Co Flux, a paste soldering flux that provides a clean surface through oily or rusty surfaces as a base for a firm union of solder and metal, was shown by Lake Chemical Co., Chicago, Ill. The flux is applied to the male fitting only. As heat is applied to the joint, the solder is drawn into the part being soldered and produces a clean, tight joint.

► Weld-Crete, a liquid bonding agent for bonding concrete to concrete, was shown by Larsen Products Co., Bethesda, Md. With Weld-Crete, it is not necessary to process the existing concrete base. A brush or spray coat of the material is applied to the old concrete. When the bonding agent dries (1 to 2 hrs.), new concrete is poured over the old. Weld-Crete is said to provide a permanent bond.

► Veelos link V-belts, available in reels that can be uncoupled at the desired length and used, were shown by Manheim Mfg. & Belting Co., Manheim, Pa. The belts cause less vibration than ordinary V-belts, and they are said to last longer because of their greater flexibility. They are adjustable to any length and adaptable to any drive.

► The Mechanized Mole, a machine for cutting reinforced concrete, granite, marble, tile, asphalt, or any other hard aggregate material, was demonstrated by Molco Drilling Machines, Inc., Washington, D. C. The machine, a lightweight, portable unit, leaves a clean, accurate hole the size and depth required. One ordinary mechanic can operate the machine. Using water as a cooling agent, the machine is dustless in operation.

► Model F-300, a vacuum cleaner for both wet and dry pickup, was shown by Multi-Clean Products, Inc., St. Paul, Minn. Attachments are designed to clean ceiling, walls, overhead pipes, and floors and to pick up scrub water or liquid spillage. The machine handles air at 220 cu. ft. per min.

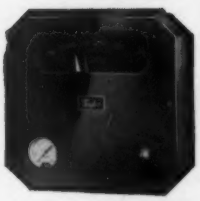
► A rust remover, Rustripper, that removes rust without a dimensional change of the treated part was shown by Oakite Products, Inc., New York, N. Y. Action stops when the rust is gone; and because the solution is alkaline, there is no hydrogen embrittlement. The product also removes oil, grease, fats, and various types of paints.

► A rotary high-pressure compressor, said to be silent and free from vibration, was shown by Davey Compressor Co., Kent, Ohio. The only moving parts of the compressor are a slotted rotor and several flood-lubricated vanes. It has no value, piston rings, connecting rods, or crankshaft. Motor horsepower in the six sizes ranges from 2 to 5.

► An a.c.-d.c. welder that operates on single phase was part of the exhibit of Harnischfeger Corp., Milwaukee, Wis. With just a flip of a switch you change from a.c. to d.c. operation.

Instantaneous heat selection is said to be as easy as tuning your radio; you

# Read how Taylor cuts dye jig operating costs!



ONE of the best ways to cut dye jig operating costs and increase production *and* efficiency is to install automatic control. Then you can be certain your shades will go out evenly matched.

The Taylor system illustrated schematically and pictured below in action gives you:

**1. Uniform dyeing**—by automatically maintaining uniform dye liquor temperature, *regardless of wide variations in steam pressure in the header.*

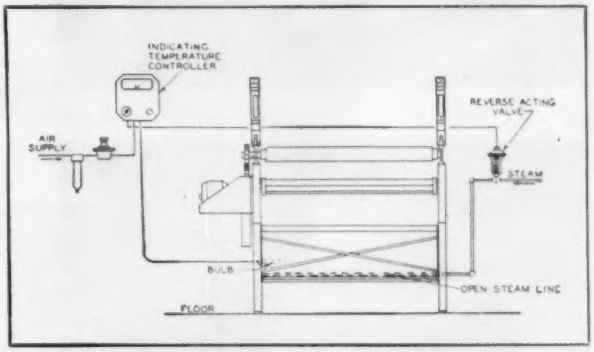
**2. Big steam savings**—through automatic throttling control. Maintains an even temperature with no overpeaking *—such as you get with on-and-off control.*

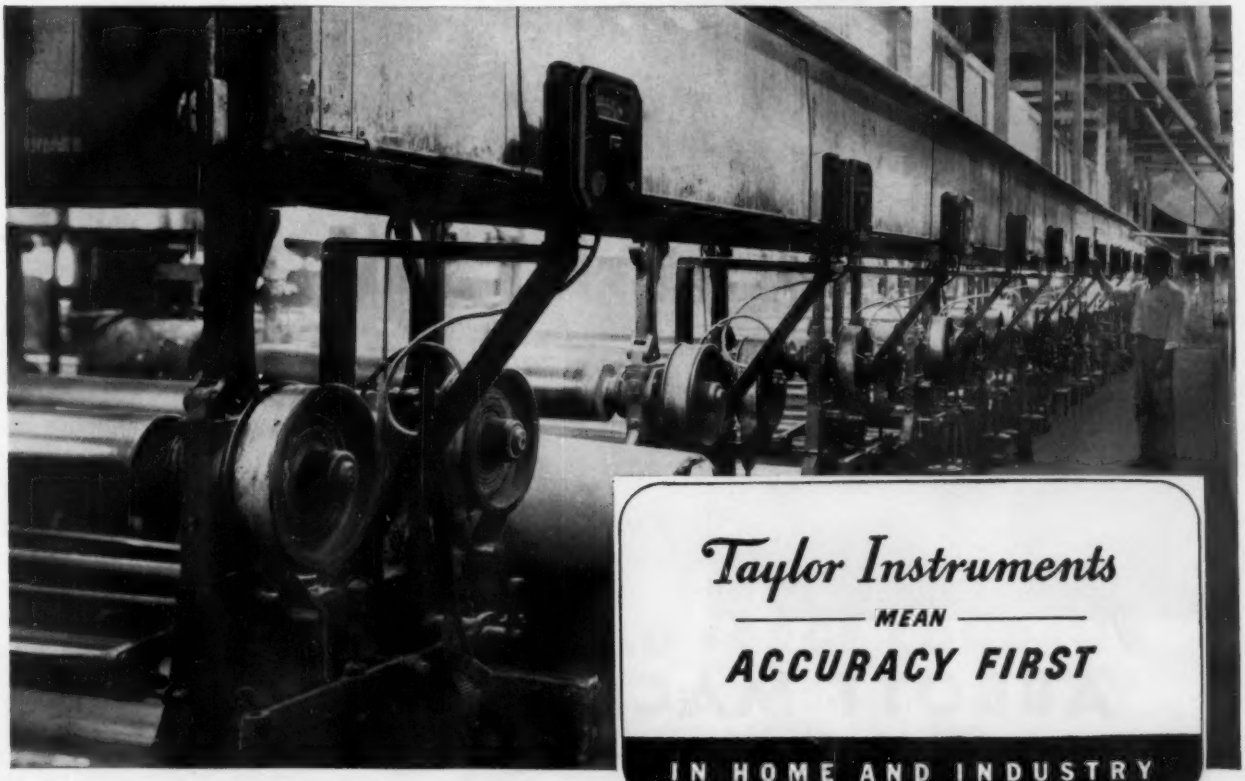
This inexpensive control system comprises the sturdy, dependable Taylor 86R Fulscope* Indicating Temperature Controller and a correctly sized Taylor Diaphragm Valve. The valve is made of rugged cast iron—built for years of dye house service.

Ask your Taylor Field Engineer how the Taylor Automatic Dye Jig Control can save you money, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

*Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.*

*Reg. U.S. Pat. Off.



*Taylor Instruments*
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

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## Automatic Winders for Rewound Filling

to take advantage of large package spinning, more yarn on filling bobbins, more uniform bunches, better weaving bobbins, and inspected yarn, all of which go to make a better fabric.

### Abbott Traveling Spindle Package Winders

Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.

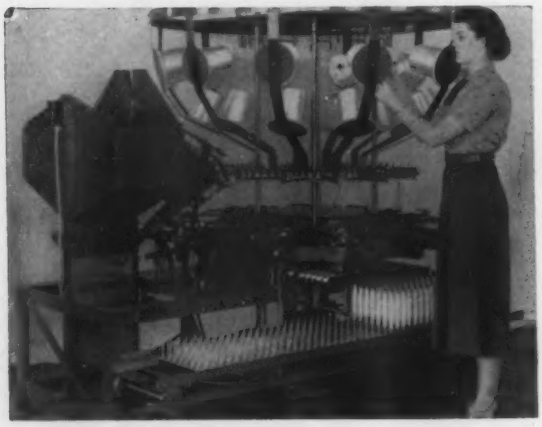
### Abbott Traveling Spindle Automatic Quillers

For winding cotton, spun rayon, worsted, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

For rewinding woolen yarn from mule and ring frames.

For winding filament rayon and nylon, etc., with automatic pinboard attachment or wide belt inspection conveyor.

Production up to 2000 bobbins per hour per operator.



### Abbott Fully Automatic Radial Quiller

For smaller lots and widely diversified mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or into wide belt conveyor.

One operator can run several machines producing up to 2000 bobbins per hour per operator.

Can be equipped with measured yardage device for two-shuttle looms.

# ABBOTT MACHINE CO., INC.

WILTON, NEW HAMPSHIRE

**SOUTHERN SALES AND SERVICE: GREENVILLE, S. C.**

# DON'T OVERLOOK JOBS THE AXIAL FLOW DOES BEST!

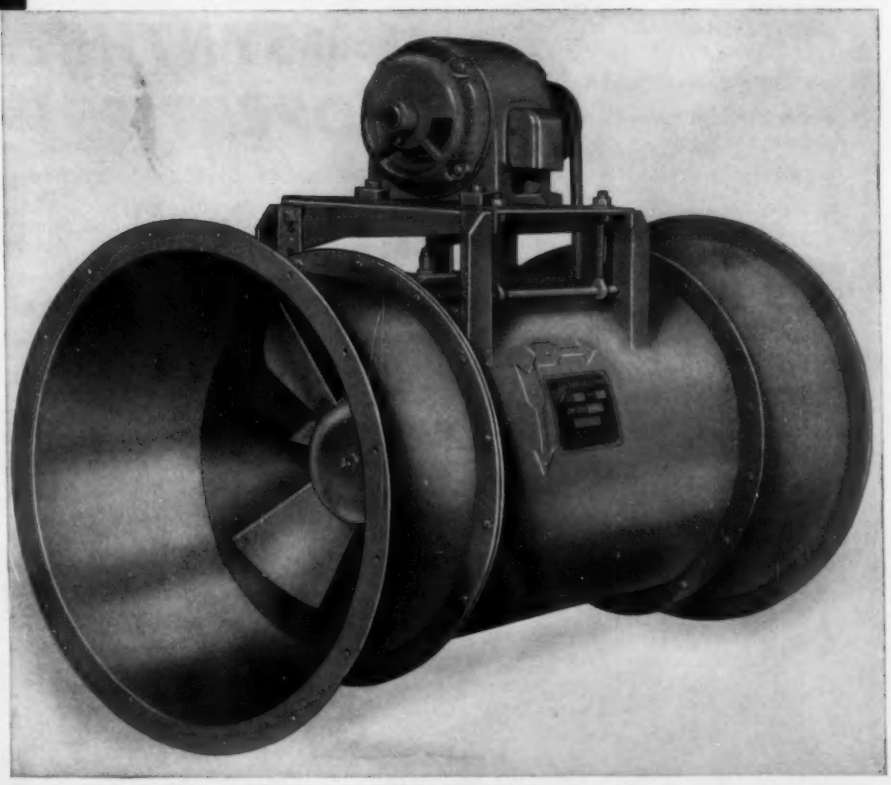
The axial flow fan design offers distinct advantages well worth considering for a growing variety of jobs:

1. STRAIGHT LINE EFFICIENCY. Being basically designed for duct mounting, the axial flow is at its best when mounted in straight duct runs. "Buffalo" Axial Flows are giving excellent service as duct-mounted "boosters" in systems—also as light-duty ventilation, exhaust and industrial air conditioning supply fans.

2. LIGHT WEIGHT. This permits economical installation. In all but the very largest sizes, no heavy foundations or structural support are required. "Buffalo" Axial Flow Fans are often installed as part of the pipe or stack in hood and vat or other roof exhaust systems.

3. SPACE SAVINGS. These duct-size fans fit in close to walls or ceilings. Space-saving applications vary from paint spray booth exhaust to forced draft for cooling towers — from circulation of chilled air in quick freezing to boiler room cooling. Here, high efficiency influences the choice, as well as compact size.

Naturally, all axial flow fans are not alike. When you specify "Buffalo", you assure your customer the top performance inherent in the "Q" Factor*. Write today for Bulletin 3533-EF for full details.



Right, "Buffalo" Type "B" Vaneaxial Fan. Outlet guide vanes smooth out air flow for greatest efficiency and quiet operation. Available for high or low temperatures, corrosive fumes, explosive atmospheres, etc.

NOTE: No one fan is the answer to every problem. "Buffalo" builds all types, including broad lines of centrifugal and propeller fans. Full details on request.

**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

"Buffalo"

**BUFFALO FORGE COMPANY**

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VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

# Every Textile Mill Needs This Steel Handbook

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**Latest, complete stock and weight handbook. Tells at a glance the types, sizes and shapes of steel warehouse products carried for you by one of the South's largest steel warehouses. Saves you valuable time. We'll be glad to send a copy on request. Then, you can easily order by phone, whatever you need, one piece or a carload.**

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just turn the radio-type dial knob or step on a foot treadle.

▶ An automatic system of lubrication to be used with compressed air was shown by C. A. Norgren Co., Englewood, Colo. With the system, Micro-Fog Lubrication, the air that powers the tool or machine is lubricated by metered drops of oil in the air stream. An air-oil fog is created; and by controlling the flow of oil into the air stream and making the flow visible, the amount of lubrication can be measured to meet any specific requirement.

▶ An automatic drain filter for compressed-air lines operates whenever there is pressure on the air system—whether the air pressure is constant or fluctuating. The filter is designed for air lines to portable and other air-operated equipment where manual draining is impractical. The manufacturer is C. A. Norgren Co., Englewood, Colo.

▶ Centralized lubrication with either oil or grease under pressure was demonstrated by The Farval Corp., Cleveland, Ohio. Oil is delivered to a group of bearings in exact quantities as often as desired.

The control valve has only two moving parts and has no springs, ball checks, or pinhole parts to cause trouble.

# What Worsted Men Should Know About SYNTHETIC-FIBER PROPERTIES

**▶ Two fiber properties—finish and crimp—determine processing techniques**

**▶ With experience, standard machines can be used to evaluate fibers and finishes**

THE FINISH AND CRIMP of synthetic fibers dictate the processing techniques used in worsted-system processing. Each synthetic fiber exhibits its own particular properties during processing, but these processing characteristics are all directly related to the fiber finish and crimp.

The most important function of a good finish is to provide adequate antistatic properties, for without this protection the fiber could not be processed at all. As we move fibers at increased speeds, the static problem is intensified.

The problem of static can be eliminated, but new and equally difficult situations would be created. Crimped fibers tend to generate less static than the same fibers would if left uncrimped.

The evaluation of antistatic agents led us to the assumption that a satisfactory fiber finish is composed of four separate factors: (1) antistatic properties, (2) fiber-to-fiber frictional properties, (3) fiber-to-metal frictional properties, and (4) compatability with other fibers and/or finishes.

The functions of crimp are closely associated with these items. Crimp also provides mass cohesion, which allows a card web or open sliver to support its own weight. The balance between the amount of crimp and the fiber finish has a definite bearing on the drafting properties of the fiber.

## How To Evaluate Fibers

Standard machines, such as a worsted card, a pin-control draft unit (pin drafter, gill reducer, or gill box), and

*Adapted from a paper presented by Walter W. Ingenthron, Jr., Manager, Synthetic Production, Craft Fabric Div., Pacific Mills, at Brooklyn Tech symposium.*

# MICRO SWITCH Precision Switches

A PRINCIPLE OF GOOD DESIGN

**MICRO SWITCH products are used**

- as trumpet stops on combing heads
- as carriage movement controls
- to prevent needle breakage
- to automatically eject unfilled quills
- as thread breakage detectors
- to control cloth position as web unrolls
- to stop bobbin winding when bobbin fills
- to control tension on cloth measuring machine
- to stop motor when gear box is opened
- to control position of pressure roll on warper
- to position clamps on cloth stretching machine
- as thread run out detector on loom shuttles
- as selvedge build-up control
- as fabric thickness detectors
- and many other textile applications

## *Hundreds of Mill Operators are saving important money with MICRO SWITCH products*

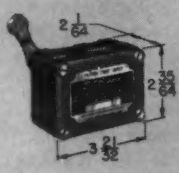
● Thousands of textile machines have been given new life—made more automatic, safer and more productive—by the installation of MICRO SWITCH precision switches.

These quick, sure-acting electrical controls are rapidly being used to replace mechanical stop motion devices which are often slower and less dependable.

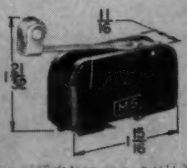
Shown here are just a few of the switches which mill operators have found particularly adaptable to use with textile machinery. Many are ruggedly housed and sealed against the effects of dirt, dust, lint or humid atmospheres.

You are invited to get in touch with the nearest MICRO SWITCH branch for advice on the switch most suitable to your requirement. Switches may be purchased from the MICRO SWITCH distributor near you. Look in the yellow pages of your phone book under "switches, electric."

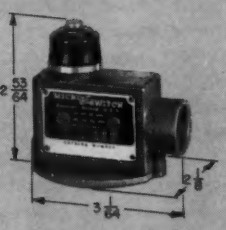
**These Switches have put new life in textile machines:**



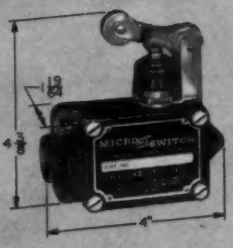
Explosion- and splash-proof switches



Small basic switches

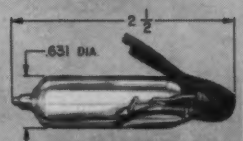


Die cast enclosed switches with sealed plungers



Die cast enclosed switches with roller actuator

Heavy duty limit switches



Glass enclosed mercury switches

MICRO SWITCH provides a complete line of extremely reliable, small-size, high-capacity, snap-action precision switches and mercury switches. Available in a wide variety of sizes, shapes, weights, actuators and electrical characteristics. For all types of electrical controls.

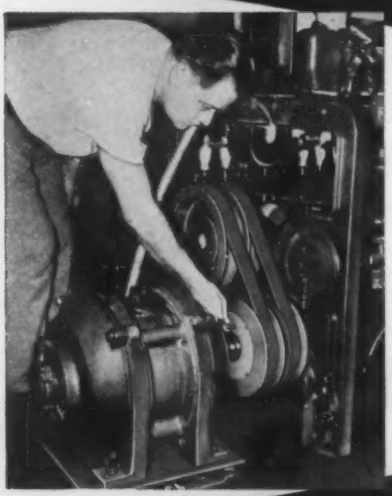
**MICRO SWITCH**

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

FREEPORT, ILLINOIS

# Now--

# Pre-set the Pitch Diameter



COMPONENTS OF
DODGE SPINNING FRAME DRIVE

- Variable Sheave with Automatic Pitch Diameter Gage
- Taper-Lock Companion Sheave
- Slide Motor Base
- Dodge Sealed-Life Belts

## No more "cut and try" with the new Dodge Variable Sheave

An automatic Pitch Diameter Gage, graduated in tenths of an inch, is mounted on the outside flange of the new Dodge Variable Sheave. A spiral line on the hub intersects with the gage dial as the flanges are moved in or out. Pitch diameter is read directly on the dial.

Quickly . . . accurately . . . easily . . . you get the pitch diameter you want with a one point adjustment. The variable sheave locks as a unit when tightened on the shaft, utilizing the Taper-Lock principle.

Keep production at a maximum with the Dodge VR Spinning Frame Drive. The companion sheave, with Taper-Lock bushings, is easily, quickly changed when necessary. Slide motor base permits quick changes in center distances to preserve proper belt tension as variable sheave is adjusted for speed changes. Sealed-Life Belts have deep side walls and lateral rigidity for efficient operation. *Write now* for complete information about the new Dodge VR Drive with automatic Pitch Diameter Gage.

**DODGE MANUFACTURING CORPORATION, 1400 Union St., Mishawaka, Ind.**

DODGE
of Mishawaka, Ind.

*Call the Transmissioneer, your local Dodge* ***Distributor.*** ***Factory*** *trained by Dodge, he can give you valuable assistance on new cost-saving methods. Look for his name* **under "Power** *Transmission Equipment"* *in your classified phone book.*

# Backing up the famous Sylvania money-back offer...

**1. a laboratory-pure phosphor...**

Efficient fluorescent lamp performance demands extremely close control of phosphor purity. In some phosphors, for instance, contamination in the order of 10 parts per million can play hob with lamp efficiency. That's why Sylvania maintains full laboratory control over phosphor purity from raw product to finished lamp.

**2. a three-way bath...**

For complete phosphor stability, Sylvania scrubs the faces of every tiny phosphor crystal three times . . . in acid . . . in an alkaline solution . . . in high-purity distilled water. The result? Stabilized phosphors that actually give you *more light per dollar* throughout lamp life.

## ...to bring you Sylvania's 6% bonus of light

ATTENTION TO DETAIL—all along the line at Sylvania—brings you important fluorescent lamp dividends, such as the famous *6% bonus of light*. Sylvania developments and manufacturing refinements let Sylvania back its lamps with the famous, signed money-back offer of better results. Thousands of users have switched to Sylvania—taking advantage of this famous money-back offer to prove for themselves that Sylvania lamps are better.

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the Pacific Converter, provide excellent means for evaluating fibers and finishes qualitatively.

For example, fibers with high fiber-to-metal frictional characteristics can be observed as increased carding action on a card. As increasing amounts of the same type of finish are added to the fiber, the carding action is increased. It is possible to increase the amount to a point where the doffer comb no longer removes the stock from the doffer.

In drafting the same fibers through pins, this fiber-to-metal friction causes poor drafting and a high nep count. The tendency to form neps can be reduced by increasing the number of pins per inch in the fallers. But finer pinning increases the fiber-to-metal friction, and frequently the fibers will not draft at all. Coarser pinning does not provide the proper fiber control, and the nep count and the sliver unevenness are adversely affected.

When the Pacific Converter is used to evaluate fiber finish, the creel indicates the fiber-to-metal characteristics; and the shuffle zone is used to study fiber-to-fiber factors and crimp. Also, if certain processing problems are indicated, an additional finish can be applied at the crimper box for optimum results in the succeeding operations.

### How Orlon Behaved

Type 41 Orlon provided a good example of how these factors affect processing results. This fiber, in either staple or tow form, had a reasonable crimp and its antistatic properties were fair. It could be readily processed through a card or Pacific Converter and two stages of pin-control drafting. But it failed completely on the third stage.

During this processing, the original crimp was reduced to practically zero; and without crimp, an open sliver could not support its own weight. The antistatic properties were also lost, and the fibers would jump to the nearest metal part of the machine.

On the Pacific Converter, we noticed that increased pressure on the shuffle rolls caused the fibers to draft in clumps instead of moving individually. As the pressure was reduced, the appearance on the delivery apron improved. In fact, the pressure had to be lowered to the point where most of the control came from fiber-to-fiber friction instead of the usual roll pressure. The reduced pressure also preserved more of the crimp.

From experience, it was possible to use these findings for machines using pins as control in the drafting zone:

1. Coarse pinning — to preserve crimp and reduce fiber-to-fiber friction
2. Low fiber density in the pins— to obtain optimum evenness
3. Low drafts—for lowest possible nep counts during the early stages of processing

In the case of Type 41 Orlon, the optimum settings and conditions did not improve processing enough to be practical. Fortunately, research work by many companies provided us with oils, chemical finishes, and static bars to aid us in these emergencies. The problem then was to select a material that would increase the mass cohesion, improve the antistatic properties, and decrease fiber-to-fiber friction. To our knowledge, this ideal material does not exist and we had to compromise. In this case, the material selected had excellent antistatic properties; and mass cohesion and the fiber-to-fiber factors were improved enough to allow the Type 41 Orlon to be processed in a reasonable manner.

Now, the improved acrylic fibers can be processed without any additional oil or finish.

### Incompatibility Is a Problem

As we try to put together various combinations of fibers to produce improved and more-attractive fabrics, the incompatibility of fiber finishes is a definite handicap.

For example, it is possible to process viscose or acetate fibers in a 100% state. However, in trying to process a 50-50 blend, the static problem can make processing unreasonable.

Theoretically, the simplest way to take full advantage of the many possibilities offered by combinations of fibers would be to have an ideal finish on each fiber. This is most important when hydrophobic and viscose fibers are blended. But the percentage of finish that can be applied is limited. The hydrophobic fibers do not hold the finish; and the entire application is absorbed by the viscose, which becomes too wet for practical processing. Ideal finishes for every fiber do not show promise of becoming a reality in the very near future.

The most practical solution would be a standardized quantitive test method for all fiber-finish factors. Fiber manufacturers could then assign a value to each factor in the same way that code numbers are used.

This system would provide a reference point for the mill man to guide his processing techniques. It could also be used by the chemical suppliers as a guide to the requirements of their products. The mills in turn could use the same system to establish control limits for their particular machines. With this control point, it would be simple to correct any fiber or blend to that value. Optimum efficiencies could then be expected.

# NON-YELLOWING

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# How To Reduce PILLING Of Dacron Fabrics

► **Pilling control starts with the yarn, but the finishing methods outlined here will help in the production of smooth fabrics that resist pilling.**

THE PROBLEM of pilling in Dacron fabrics has been considerably reduced by the modification of yarn structure, fabric construction, and special mechanical finishing methods.

The use of plied yarns with somewhat higher twist has resulted in fabrics inherently more resistant to pilling. For example, a 2/50 worsted-system yarn with 19 tpi. of Z twist in the single yarn and 24 tpi. of S twist in the plied yarn results in a more pill-resistant fabric than a yarn with 19 tpi. of Z twist in the single yarn and 21 tpi. of S twist in the ply yarn.

The construction of the fabric has a significant effect on its tendency to pill. Plain weaves are less susceptible to pilling than gabardines, for instance.

Increasing the pickage reduces pilling but cannot be carried beyond the point where it affects fabric hand

## Finishing Can Reduce Pilling

Singeing, when properly done, is the best single treatment for reducing pilling in tropical worsteds. For best results, singeing should be preceded by brushing and shearing to help reduce the formation of large, melted fiber tips. The singeing process should include a pass over at least two flames rather than one. A speed of 100 to 150 yds. per min. is suggested as a base for singeing trials.

## Brushing

Brushing machines of various types, followed by heating, have been used with some success.

A modified tiger makes a satisfactory brushing machine. The brush is 15 ins. in diameter and is covered with card-fancy clothing ground so that a smooth heel-and-toe polishing action is obtained. The brush revolves approximately 60 times faster than the fabric speed and against the direction of the cloth. The frictional heat generated by the process tends to contort the exposed surface filaments, which, it is believed, may then be more efficiently locked into place by heat-setting.

## Soaping

Another method used with success is to wet-full the fabric with soap for 3 hrs. and then carefully brush and shear it. Four or five passes through the brushing and shearing equipment may be necessary.

## Sanding

Instead of a wet-finishing treatment, sanding followed by careful brushing and shearing will produce adequate pill resistance; but the fabrics are not as soft as wet-finished goods. However, they are somewhat softer than fabrics that have been only brushed, sheared, and singed.

## Heat-Setting

Promising results have also been obtained from heat-setting the fabric at temperature up to 400° F. in an enclosed tenter frame for 30 to 60 secs., although only limited tests have been made on this process. The best results have been obtained when shrinkage in both warp and filling is allowed. Three to seven percent tolerances have been effective and can be attained on an overfeed pin tenter. It is important that the heating is uniform; and if it is done after dyeing, the dyestuffs must be selected to withstand high temperatures without sublimation.

*From Preliminary Bulletin CSB-D-35 by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.*

# have **you** tried the Kyros?

Two synthetics in our line of textile products—Kyro AC and Kyro EO—are scoring some interesting performance records in well known textile mills. A quick review of their unusual characteristics may suggest spots in your mill where the Kyros can bring you important advantages.

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A versatile detergent . . . a fast rinser . . . consistently gives low residual oil contents with all types of wool oils.

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**SUGGESTED USES:** Outstanding for "acid" fulling and scouring wool fabrics carbonized in the grease, producing a soap type finish.

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# TEXTILE CALENDAR

### April

**Symposium on Textile Research,** Polymer Research Institute, Brooklyn Polytechnic Institute, Brooklyn, N. Y., April 2.

**AATCC, New York Sect.,** Kohler's Swiss Chalet, Rochelle Park, N. J., April 2.

**Alabama Cotton Manufacturers Assn., 50th anniversary meeting,** Biloxi, Miss., April 13 to 15.

**American Society of Lubrication Engineers, annual meeting,** Hotel Sherman, Chicago, Ill., April 13 to 15.

**Phi Psi Textile Fraternity, annual convention,** Beaconsfield Hotel, Brookline, Mass., April 14 to 16.

**AATCC, Hudson-Mohawk Sect.,** Jack's Restaurant, Albany, N. Y., April 15.

**Symposium on Mechanical Properties of Textile Fibers and Yarns, Canadian ATCC, Quebec Sect.,** Ciba Co. Conference Room, Montreal, Canada, April 15.

**AATCC, Philadelphia Sect.,** Kugler's Restaurant, Philadelphia, Pa., April 15.

**AATC, Midwest Sect.,** Netherlands Plaza, Cincinnati, Ohio, April 16.

**Textile Exhibition, Canadian ATCC,** Sheraton-Mount Royal Hotel, Montreal, Canada, April 21 to 23.

**AATCC, Western New York Sect.,** Buffalo, N. Y., April 22.

**AATCC, New York Sect.,** Kohler's Swiss Chalet, Rochelle Park, N. J., April 22.

**Georgia Textile Operating Executive** Georgia Tech, Atlanta, Ga., April 23.

**AATCC, Southeastern Sect.,** American Legion Club, Lindale, Ga., April 23.

**Knitting Arts Exhibition,** Convention Hall, Atlantic City, N. J., April 25 to 29.

**Underwear Institute, annual meeting,** Haddon Hall Hotel, Atlantic City, N. J., April 25.

**AATCC, Piedmont Sect.,** Robert E. Lee Hotel, Winston-Salem, N. C., April 30.

**Cotton Manufacturers Assn. of Ga., 55th anniversary convention,** Boca Raton Hotel, Boca Raton, Fla., April 27 to 29.

**Delta Kappa Phi Textile Fraternity, annual convention,** Lowell Tech, Lowell, Mass., April 29 and 30.

### May

**The Fiber Society, spring meeting,** School of Textiles, Alabama Polytechnic Institute, Auburn, Ala., May 4 and 5.

**Cotton Merchandising Clinic, Cotton Economic Research,** The University of Texas, Austin, Tex., May 6 and 7.

**International Silk Congress,** Brussels, Belgium, May 9 to 14.

**AATCC, South Central Sect.,** Hotel Patten, Chattanooga, Tenn., May 14.

**American Materials Handling Society Exposition,** International Amphitheatre, Chicago, Ill., May 16 to 18.

**Textile Institute, annual conference,** Caxton Hall, London, England, May 17 to 20.

**AATCC, New York Sect.,** Kohler's Swiss Chalet, Rochelle Park, N. J., May 20.

**AATCC, Philadelphia Sect.,** Manufacturer's Golf & Country Club, Oreland, Pa., May 20.

**South Carolina Textile Manufacturers Assn., annual meeting,** The Cloisters, Sea Island, Ga., May 26 to 28.

### June

**Tufted Textile Manufacturers Assn., annual convention,** Park Sheraton Hotel, Washington, D. C., June 2 to 4.

**AATCC, Southeastern Sect.,** Radium Springs, Ga., June 3 and 4.

**AATCC, Piedmont Sect.,** Mayview Manor, Blowing Rock, N. C., June 10 and 11.

**AATCC, Midwest Sect.,** Lake Lawn Lodge, Delawan, Wis., June 11.

**Southern Textile Association, annual convention,** Mayview Manor, Blowing Rock, N. C., June 16 to 18.

**Materials Handling Exposition,** International Amphitheater, Chicago, Ill., June 16 to 20.

**International Textile Exhibition,** Brussels, Belgium, June 25 to July 10.

**American Society for Testing Materials, annual meeting,** Chalfonte-Haddon Hall, Atlantic City, N. J., June 26 to July 1.

**International Congress of Scientific Research in the Textile Industry,** The Centre Scientifique et Technique de l'Industrie Textile Belge, 24, rue Montoyer, Brussels, Belgium, June 27 to 29.

**American Institute of Electrical Engineers, Textile Subcommittee, summer meeting,** Swampscott, Mass., June 27 to July 1.

### July

**AATCC, South Central Sect.,** Lookout Mountain Hotel, Chattanooga, Tenn., July 29 and 30.

### September

**The Fiber Society, fall meeting,** Mass. Institute of Technology, Cambridge, Mass., Sept. 8 and 9.

**AATCC, Western New England Sect.,** Rapp's Restaurant, Shelton, Conn., Sept. 16.

**Combed Yarn Spinners Assn., annual meeting,** The Homestead, Hot Springs, Va., Sept. 16 and 17.

**Chemical Finishing Conference, National Cotton Council,** Chalfonte-Haddon Hall, Atlantic City, N. J., Sept. 20 and 21.

**AATCC, national convention,** Chalfonte-Haddon Hall, Atlantic City, N. J., Sept. 21 to 23.

**Northern Textile Assn. and National Assn. of Cotton Manufacturers, annual convention,** Wentworth-By-The-Sea, Portsmouth, N. H., Sept. 29 and 30.

**Machine Tool Show,** International Amphitheater, Chicago, Ill., Sept. 6 to 17.

### October

**North Carolina Textile Manufacturers Assn., annual meeting,** Carolina Hotel, Pinehurst, N. C., Oct. 13 and 14.

**National Council for Textile Education, fall meeting,** sponsored by American Textile Machinery Assn., The Larches, Hopedale, Mass., Oct. 17 to 19.

**AATCC, Philadelphia Sect.,** Penn-Sherwood Hotel, Philadelphia, Pa., Oct. 21.

**AATCC, Piedmont Sect.,** Hotel Barringer, Charlotte, N. C., Oct. 29.

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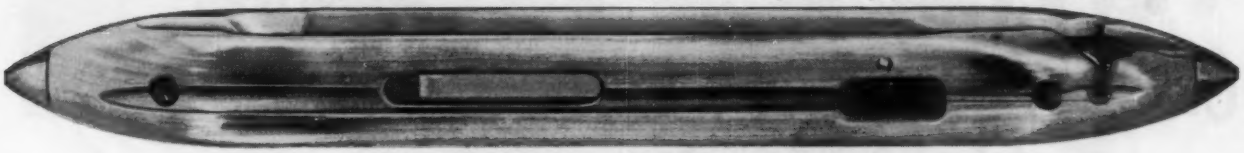

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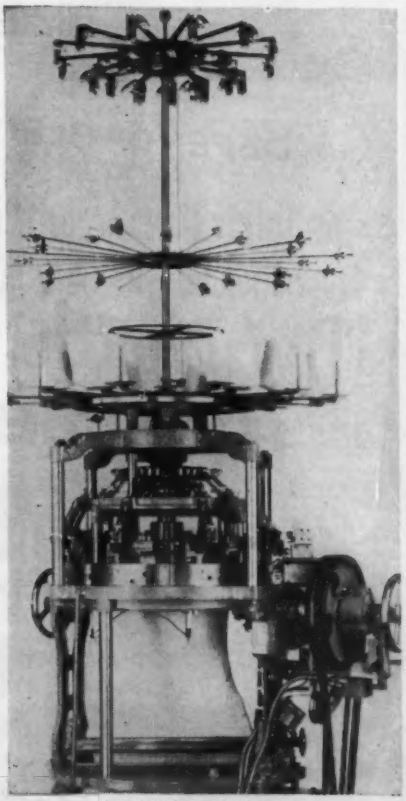

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**AMERICAN MONOMER CORP.** and **MONOMER-POLYMER, INC.**, Leominster, Mass.—Have been acquired by the Chemical Div. of Borden Co. . . . **AMERICAN SUPPLY CO.**, Central Falls, R. I.—Has been made an authorized representative for American Durafilm Co. for the application of Teflon and other coatings. . . . **AMERICAN VISCOSE CORP.**, Philadelphia, Pa.—Has named Karl M. Currier director of the Textile Research Dept.; W. Edwards Dungan plant manager of the Roanoke, Va., rayon plant; James C. Wiegerink to the Technical Dept., Marcus Hook, Pa.; and Dr. M. T. O'Shaughnessy leader of the newly-formed Viscose & Pulp Section. David M. Ebert has been transferred to the Experimental Spinning Group Marcus Hook; James L. Hunter transferred to rayon staple sales and F. Lawrence Rapp to Filatex sales, both at Charlotte, N. C. . . . **ATLANTA PAPER CO.**, Atlanta, Ga.—H. Robert Corder named representative in the New Orleans, La., area. . . . **BARNHARDT BROS. CO.**, Charlotte, N. C.—James R. Scoggins named to the sales staff handling mills in North and South Carolina and Virginia. . . . **CELANESE MEXICANA CO.**, Mexico City, Mexico—Has started production in its new nylon-fiber plant. . . . **CHEMSTRAND CORP.**, Decatur, Ala.—Welby C. Whitin has been named to the sales staff of the New York, N. Y., office. . . . **CLEVELAND CRANE & ENGINEERING CO.**, Wickliffe, Ohio—William J. Ryan named assistant to the executive vice president and general manager. . . . **COLUMBIA SOUTHERN CHEMICAL CORP.**, Pittsburgh, Pa.—Robert L. Hutchison and Joseph A. Neubauer named vice presidents. . . . **CROWN CHEMICAL CORP.**, Providence, R. I.—John J. Valter named technical sales representative. . . . **E. I. DU PONT DE NEMOURS & CO., INC.**, Wilmington, Del.—

**WILLIAM F. BODE (left) has been named general manager of the Selig Co., Atlanta, Ga. NORMAN BUSH (center) has been named sales representative for Benjamin Booth Co., Philadelphia, Pa. He will cover the Middle Atlantic, Middle West, and Southern states. ERNEST K. HUNT (right) has been appointed public-relations manager of American Cyanamid Co., New York, N. Y.**

Ralph C. Krueger named to the newly created position of assistant manager of industrial sales of the Film Dept. . . . **FOSTER MACHINE CO.**, Westfield, Mass.—Ernest P. Dodge named southern manager. He will be located at the Charlotte, N. C., office. . . . **ROBERT GAIR CO.**, New York, N. Y.—Francis M. Taylor named director of public relations. . . . **GENERAL LATEX & CHEMICAL CORP.**, Cambridge, Mass.—Has completed its new plant at Ashland, Ohio, that will supply natural and synthetic rubber latex and resin compounds for industrial purposes. . . . **GLASS FIBERS, INC.**, Toledo, Ohio—Will merge

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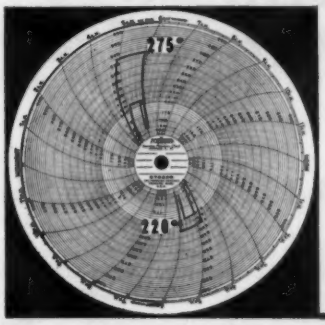


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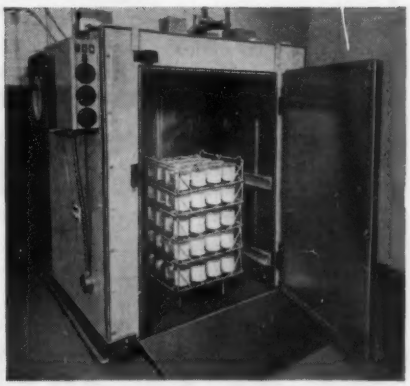

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THE AMERICAN CRAYON COMPANY
SANDUSKY, OHIO NEW YORK

**EMPIRE TEXTILE MILL CRAYONS**

REG. U. S. PAT. OFF.


## NEWS ABOUT SUPPLIERS Continued

with L-O-F Glass Fibers Co. . . . **HART-MOISTURE-METERS**, New York, N. Y.—Has transferred its offices and laboratory to Babylon, L. I., N. Y. . . . **E. F. HOUGHTON & CO.**, Philadelphia, Pa.—Jack E. McLaughlin named assistant manager of the Textile Sales Development Dept. Dr. James T. Eaton named to the newly created position of vice president in charge of production. . . . **C. A. LITZLER CO., INC.**, Cleveland, Ohio—H. Leslie Bullock appointed district sales engineer, covering metropolitan New York and New England. . . . **LIVINGSTONE COATING CORP.**, Charlotte, N. C.—Appointed Southeastern distributor of the Sealube Co., Wakefield, Mass. . . . **A. MONFORTS MASCHINENFABRIK**, M. Gladbach, W. Germany—Has appointed H. W. Butterworth & Sons Co., Bethayres, Pa., and Texplant Corp., Stamford, Conn., sales representatives in the United States. . . . **NATIONAL STARCH PRODUCTS, INC.**, New York, N. Y.—Has a $3,500,000 expansion and modernization program under way for all its manufacturing and research facilities. . . . **NEW YORK & NEW JERSEY LUBRICANT CO.**, New York, N. Y.—Robert A. Henkel named sales representative in Pittsburgh, Pa., and the western Pennsylvania territory. . . . **PACKAGE MACHINERY CO.**, East Longmeadow, Mass.—Lewis A. Curtis appointed general sales manager and J. Joseph Kelly named general manager of Reed-Prentice Corp., Worcester, Mass., a wholly owned subsidiary. . . **PENNSYLVANIA SALT MFG. CO.**, Philadelphia, Pa.—George B. Beitzel announced plans to retire later this year; William P. Drake appointed executive vice president. . . . **PNEUMAFIL CORP.**, Charlotte, N. C.—Gordon A. Gatlin named a service engineer. . . . **ROBERT-SHAW-FULTON CONTROLS CO., FIELDEN INSTRUMENT DIV.**, Philadelphia, Pa.—A. W. Roat named field sales representative covering Ohio and northwest Pennsylvaina. He will be located at the Cleveland Heights, Ohio, office. . . . **SACO-LOWELL SHOPS**, Boston, Mass.—Has elected W. Frank Lowell senior vice president; Jerome Preston and Charles F. Hovey, members of the board; F. Gordon Brigham, Jr., treasurer. . . . **TEXTILE MACHINE WORKS**, Reading, Pa.—Has acquired the Keller Machine Co., Inc., Athens, Ga. . . . **UNITED ANILINE CO.**, Norwood, Mass.—Has opened a larger laboratory and manufacturing facilities. Sales offices will also be located at this address. . . . **WORTHINGTON CORP.**, Harrison, N. J.—Aloysius M. Tullo named general manager of a new division to be known as the Harrison Div. Other appointments at this division include Clarence K. Hood, division sales manager; George F. Habach, executive engineer; Max A. Heyman, works manager; Thomas F. Quinlan, division comptroller; and Charles Schwalje, foundry manager. Victor Gerbereux named general manager of the Standard Pumps Div., also to be located at this location. . . . **WARP COMPRESSING MACHINE CO., INC.**, Worcester, Mass.—Appointed sales representatives for Bor-al-sil thread guides manufactured by Richard H. Bird & Co., Inc., Waltham, Mass. Joseph Moeller will be in charge of sales.

**M. M. McCANN (left) has been named technical representative for Synthron, Inc., Ashton, R. I. He will cover Virginia and North Carolina. CARL CHALMERS (center) has been promoted to assistant sales manager of the Industrial Products Div., Texize Chemicels, Inc., Greenville, S. C. HERMAN S. BOYD, JR., (right) has been named a Southern representative of Saco-Lowell Shops, Boston, Mass. He will be located in the Charlotte, N. C., office.**

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If you assume your own credit risks, you should investigate the benefits of Factoring by Crompton. Add up credit losses, financing, receivable bookkeeping and collection costs, plus the potential profit on volume you are forced to refuse because your slower moving capital can't handle it. Compare the total with our service charges. We won't cost you more – and very probably less.

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*The Human Factor*

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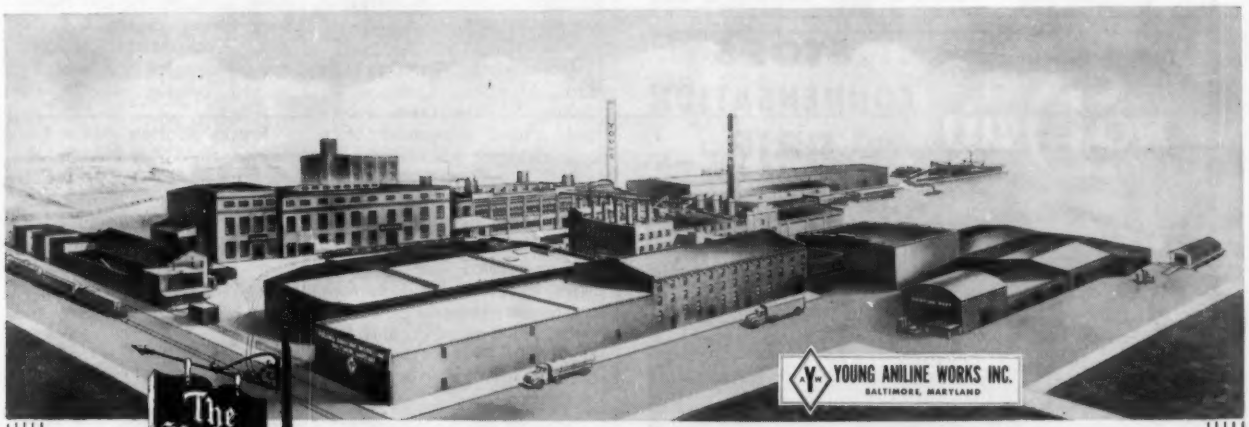


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✓ **CLEARER CLOTH** . . . all wool or cotton back; highest quality—yet, low in price.

✓ **ROLLER CLOTH** . . . complete range of types, sizes, weights; all wool or part cotton.

✓ **LAPPING CLOTH** . . . cotton warp; either all wool, or part synthetic filling.

✓ **OTHER SPECIALTY WOVEN FABRICS** . . . developed at your request.

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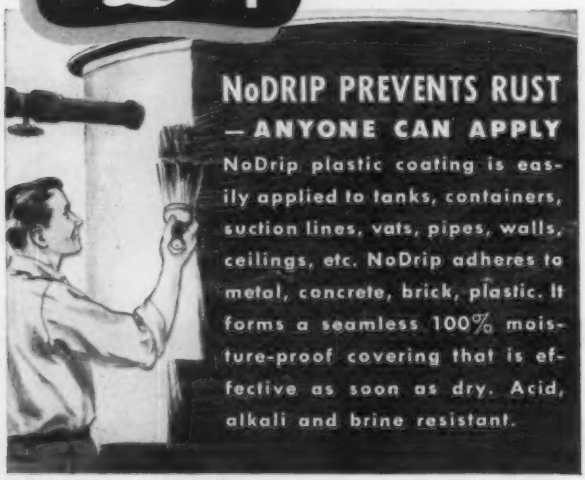

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# NEWS about MILLS

## COTTON MILLS

**Arawana Mills,** Danbury, Conn., has bought the 160,000-sq.-ft. plant at North Grosvenor-Dale, Conn., that was formerly operated by Cluett Peabody & Co.

**Brenham Cotton Mill, Inc.,** Brenham, Tex., has awarded the contract to R. S. Peterson, Brenham, for a one-story addition that will cost about $34,000, exclusive of equipment. Philip G. Norton & Associates, Bryan, Tex., is the architect.

**Callaway Mills,** LaGrange, Ga., is moving its Valway plant to its Calumet unit. The Calumet plant will concentrate its production entirely on scatter rugs.

**Consolidated Textile Mills Ltd.,** Montreal, Que., is installing 72 new 60-in. looms and related equipment at a cost of about $225,000.

**Dalton Candlewick, Inc.,** a subsidiary of Dixie Mercerizing Co., Chattanooga, Tenn., has purchased the Royston Mills, Inc., Royston, Ga., with equipment consisting of 20 cards, 7,000 spindles, and 192 broad looms. New equipment is being installed.

**Drayton Mills,** Spartanburg, S. C., installed 8,300 Saco-Lowell spinning spindles in 1954 and plans to add 7,800 more in 1955. New opening-room equipment is also to be installed this year. The company has an expansion and modernization program under way that will cost about $400,000.

**Double Shoals Mills, Inc.,** Double Shoals, N. C., has been leased to Belmont Cotton Mills Co., Shelby, N. C.

**Esther Mill Corp.,** Shelby, N. C., plans to construct a three-story addition that will cost $150,000. The 26,000-sq.-ft. addition will provide space for about 75 more looms.

**Gold-Tex Fabrics Corp.,** Rock Hill, S. C., is reopening its mill division following a $2,000,000 remodeling and modernization program. About 300 people will be employed.

**Huntsville Mfg. Co.,** Huntsville, Ala., will modernize its picking, carding, roving, and spinning during 1955. The company will rebuild and modernize 837 E-model looms. New floors and lighting are also included in the modernization program.

**Indian Head Mills, Inc.,** New York, N. Y., and **Naumkeag Steam Cotton Co.,** Salem, Mass.—Merger of these two companies has been approved by the stockholders.

**Joanna Cotton Mills Co.,** Joanna, S. C., has awarded the contract to Fiske-Carter Construction Co., Spartanburg, S. C., for an addition to its Plant No. 2. The estimated cost is $41,523. Lockwood Greene Engineers, Inc., Spartanburg, is the architect and engineer.

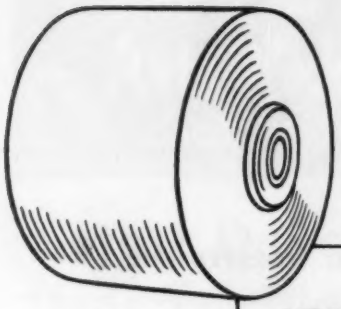
**Lawtex Corp.,** Dalton, Ga., has begun an expansion and remodeling program that is expected to cost nearly $500,000. Plans call for a completely new dyeing and finishing plant.

**Quaker Meadows Mills, Inc.,** Hickory, N. C., is constructing a new office building.

**G. H. Rauschenberg Co.,** Dalton, Ga., is installing new equipment for the manufacture of broadloom carpeting. The company will concentrate on carpet production.

**Springs Cotton Mills** is having a basement dug under its Fort Mill Plant, Fort Mill, S. C., where additional cards

# LARGE PACKAGES HAVE ADVANTAGES in the steps which FOLLOW THE SPINNING

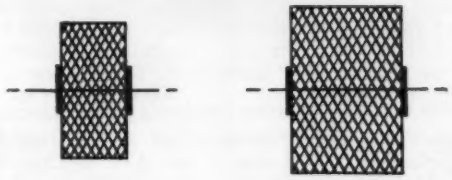


## SPINNING

12" Bobbin — 3" Ring — 12 oz. Bobbin
= 1.33 Bob/lb. — 15,000 Yds.
9" Bobbin — 2" Ring — 3.85 oz. Bobbin
= 4.16 Bob/lb. — 5,000 Yds.

**3 TIMES** As Much Yardage On Bobbin

## SPOOLING

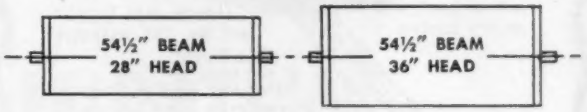


| TYPE "C" CHEESE | TYPE "D" CHEESE |
|---|---|
| 2.38 LBS. | 6.00 LBS. |
| 48,000 YDS. | 120,000 YDS. |

**2.5 TIMES**

AS MUCH YARDAGE PER CHEESE

## WARPING




| 28" BEAM | 36" BEAM | 40" BEAM |
|---|---|---|
| 530 LBS. | 875 LBS. | 1,050 LBS. |
| 24,000 YDS. | 40,000 YDS. | 40,000 YDS. |
| 445 ENDS | 441 ENDS | 529 ENDS |
| BEAMS PER CHEESE | BEAMS PER CHEESE | BEAMS PER CHEESE |
| TYPE "C"-2 | TYPE "C"-1 | TYPE "C"-1 |
| TYPE "D"-5 | TYPE "D"-3 | TYPE "D"-3 |

## SLASHING

*Assuming 1,200 yds. per Loom Beam*

| 28" BEAM | 36" BEAM | 40" BEAM |
|---|---|---|
| 20 Loom Beams Per Set | 33 Loom Beams Per Set | **39** Loom Beams Per Set |
| Average Slasher Creelings per 120-hr. Week | | |
| 5.68 | 3.67 | **3.16** |

## TWISTING

| 2.38 LB. CHEESE | 6.00 LB. CHEESE |
|---|---|
| 48,000 YDS. PER CHEESE | 120,000 YDS. PER CHEESE |

**2.5 TIMES**
AS MANY BOBBINS CAN BE TWISTED
**PER CREELING**

*Note: 24s Yarn Assumed in All Comparisons*

**AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES**

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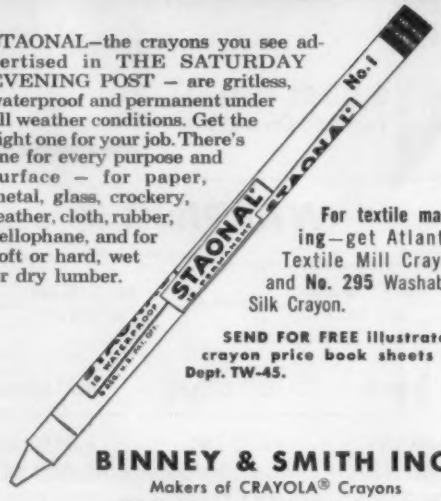


For textile marking—get Atlantic Textile Mill Crayon and No. 295 Washable Silk Crayon.

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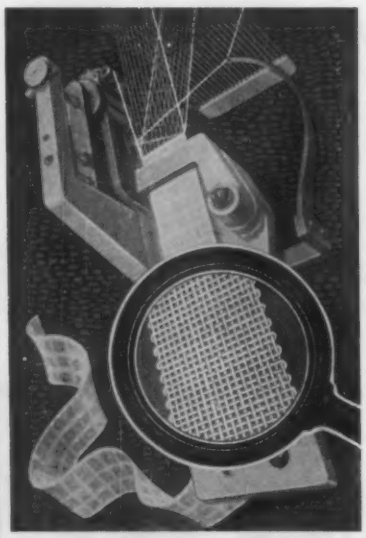
# TEXNOVO AUTOMATIC SHUTTLELESS TAPE & RIBBON LOOM



**Patented Bobbin Weaving Unit for Shuttleless High Speed Manufacture of Rigid or Elastic Ribbons Having Identical Selvedges on Either Side.**

**This Unit Is Fitted:**

1) To Texnovo Looms with 2, 10, and 20 Heads, Reducing Labor Costs by 80% and

2) To Most Makes of Shuttle Looms, Reducing Labor Costs by 80% and Triplicating Previous Production.

*SEE TEXNOVO LOOMS RANGE AT THE*
MILAN FAIR, Stand 13.595, Pavilion 13, and at the BRUSSELS INDUSTRY FAIR, Stand N. 1224, Hall N. 11.

**TEXNOVO S.P.A.** **Via Revere, 8**
**ITALY** **MILAN**




will be installed.

**Templon Spinning Mills, Inc.**, Mooresville, N. C., has awarded the contract to Barger Construction Co. for a $50,000 addition.

**Waxhaw Mfg. Co.**, Waxhaw, N. C., has merged with Tolar, Hart & Holt Mills, Inc., Fayetteville, N. C. the reorganized corporation will operate in the future under the Tolar name.

## WOOLEN AND WORSTED MILLS

**Airedale Worsted Mills, Inc.**, Woonsocket, R. I., has acquired Bachmann-Uxbridge's Killingley Worsted Mill, Stony Point, N. C., and plans to reactivate it. The mill contains 35,000 sq. ft. of space and is equipped with 4,032 worsted-spinning and 2,000 twisting spindles. It will operate 24 worsted looms and employ about 150 persons. The purchase was made by the James J. Axelrod Foundation.

**Anglo Fabrics Co.**, Webster, Mass., plans to build a three-story addition to its plant to house a shrinking section, 100 x 130 ft.

**Bigelow-Sanford Carpet Co.**, New York, N. Y., plans to consolidate its woven-carpet-manufacturing operations at its Thompsonville, Conn., plant. Transfer of carpet-manufacturing activities from the company's Amsterdam, N. Y., plant to Thompsonville will require several months. The firm is expanding its tufted-carpet plant, Georgia Rug Mills, Summerville, Ga.

**Franklin Woolen Mills**, Franklin, Mass., has installed 20 Warner & Swasey Sulzer weaving machines to replace obsolete woolen looms.

**Holyoke Fabrics Co., Inc.**, Chicopee, Mass., plans to build a new mill in Holyoke. The new plant will be one story and contain 37,000 sq. ft. of floor space. Daniel O'Connell's Sons, Inc., is the contractor.

**Millbury Mills**, Millbury, Mass., has started the manufacture of woolens and worsteds in a plant on West Main St., mostly on commission. Frank Nicoletti, formerly with Stanrich Mills, North Oxford, Mass., is president and owner of the new company.

**Olson Rug Co.**, Chicago, Ill., has let the contract to Gust K. Newberg Construction Co., Chicago, for a six-story addition, 130 x 268 ft., with an extension, 110 x 225 ft. The cost will exceed $3,500,000. Quinn & Christiansen, Chicago, is the architect.

**Patcraft Mills, Inc.**, Dalton, Ga., is nearing completion of a new one-story addition that will contain about 28,000 sq. ft. of floor space.

**Pinnacle Mfg. Corp.**, Guild, N. H., has been organized to manufacture woolen yarn. Machinery installation is nearly complete, and production will begin soon.

**Pioneer Mills of American Woolen Co.**, Pittsfield, Me., is considering the enlargement of its floor space. The proposed new mill will probably be an integrated woolen mill instead of a spinning mill as first reported. Alonzo J. Harriman, 292 Court St., Auburn, Me., is the architect.

## SYNTHETICS MILLS

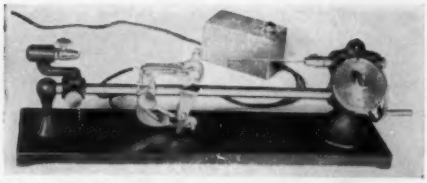
**Burlington Mills Corp.**, Gastonia, N. C., plans a series of immediate improvements costing about $1,000,000 to its four Gaston County plants. Longer-range plans are for the expenditure of an additional $1,000,000. Company has changed its name to Burlington Industries, Inc.

**Hess, Goldsmith & Co.**, New York, N. Y., has acquired full ownership of Glass Fabrics Finishing Corp., Cedar Grove, N. J., from the Waldrich Co., Delawanna, N. J., with which it had prevziously shared ownership.

**Kanmack Div. of Mack Kahn Enterprises, New York**, N. Y., has changed its name to Kanmak Textiles, Inc.

SHOWN AT THE Knitting Arts Exhibition
BOOTHS 297-298

# Latest Developments for Textile Testing



**MODEL T-1 TWIST COUNTER**

Standard Scott Twist Counter equipped with new device for determining precisely the twist of singles yarn.

**1P-2 SERIGRAPH now with Instant-Return Feature**

The touch of a lever returns the incline-plane instantly to starting position—or can return at controlled rate for hysteresis test.

**MODEL DH TENSILE TESTER**

An inexpensive tester for complying with ASTM specifications for natural and synthetic fabrics (woven or knitted), skein yarn, and single ends.

Also Model X-5 Scott Tester*, a highly satisfactory tensile tester for yarn and thread at a low price.

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"U. S." trademark for one of the original cut-rubber threads—used for many generations by industry in all kinds of narrow elastics. Also available in the heat-resistant compound.

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**cuts machine repair costs 80%—**
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**Worn Equipment and Parts**

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|---|---|
| Drive shaft journals | Top rolls, necks and centers |
| Roll journals and surfaces | Slasher roll surfaces and journals |
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**The list of metallizing users in the textile field reads like a Blue Book of the industry. Here are just a few:**

| | | |
|---|---|---|
| Cannon Mills | Deering-Milliken | Bib Mfg. Co. |
| Dan River Mills | Greenwood Mills | Bruck Mills (Canada) |

**For further information see our 8-page Bulletin in Sweet's File for Plant Engineers, or write for special free bulletin "Whip Waste with Metallizing in Textile Plants."**

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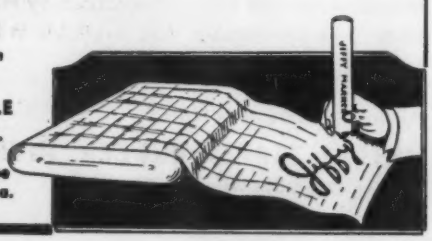



## NEWS ABOUT MILLS Continued

**Machias Mfg. Co.**, Machias, Me., is constructing a new warehouse. The extra space now used for storage will allow for the installation of 60 new looms, making a total of 300.

**Malina Co., Inc.**, New York, N. Y., and **Atlantic Rayon Corp.**, N. Y., and **Atlantic Rayon Corp.**, Providence, R. I., are now operating under combined management. No change is expected.

## KNITTING MILLS

**Allan Hosiery Co.**, Philadelphia, has leased 8,600 sq. ft. at 724 Cherry St. where women's stockings will be finished. New equipment has been installed.

**Arnold Knitwear Corp.**, Cohoes, N. Y., has been acquired by Harold S. Guerin and associates. Increased production is planned.

**Beaunit Mills, Inc.**, New York, N. Y., has started operations at its new tricot-manufacturing plant at Humacao, P. R.

**Black Mountain Hosiery Mills**, Black Mountain, N. C., is now installing a battery of Hemphill SCOP machines.

**Burlington Mills Corp.**, Franklin, N. C., has begun a training program for loopers at its $3,000,000 hosiery plant that is now under construction.

**Crown Hosiery Mills**, High Point, N. C., has awarded the contract for a two-story plant and office addition that will add 25,000 sq. ft. to its present 55,000 sq. ft. Cost is $125,000.

**Exeter Hosiery Mills**, Long Island City, N. Y., will move its operations to a building recently purchased from Wilmington Hosiery Mills, Wilmington, Del.

**Fairview Mill**, Fountain Inn, S. C., a unit of Julius Kayser & Co., has an expansion program under way that includes the construction of 3,000 sq. ft. of storage space. Added space will allow for the installation of 12 additional tricot knitting machines. In addition, the company is spending $100,000 for new dyeing equipment.

**Gotham Hosiery Co.**, New York, N. Y., has purchased Meridian Industries, Inc., Meridian, Miss., which will be operated as a wholly owned subsidiary.

**Graysville Hosiery Mills'** plant at Dayton, Tenn., has been leased for five years to Chester H. Roth., New York, N. Y.

**Hazel Knitting Co.**, Burlington, N. C., is reopening the former Robbins Knitting Co., plant in Spruce Pine, N. C., for hosiery finishing.

**Herlich Knitting Mills, Inc.**, Philadelphia, Pa., has leased 27,000 sq. ft. at 15 N. 26th St. and plans to start the production of sweaters. The company has installed 6 full-fashioned and 14 jacquard knitting machines.

**Malden Knitting Co.**, Malden, Mass., plans to construct an addition that will be used to expand its production.

**Moreck Hosiery Co.**, Perkasie, Pa., has converted its production from full-fashioned to seamless hosiery. John Beck is the owner.

**Munsingwear, Inc.**, Minneapolis, Minn., has opened its new 35,000-sq.-ft. finishing plant at Vinita, Okla.

**Perfect Plus Hosiery Mills**, Chicago, Ill., is building a $75,000 one-story combination office and warehouse.

**Picturesque Hosiery Co.**, a subsidiary of Sidney J. Kreiss, Inc., has bought from Sanson Hosiery Mills its four hosiery brands and its Allentown, Pa., dyeing and finishing plant.

**R. &. H. Hosiery Co.**, Galax, Va., has acquired additional space and will install 150 knitting machines, bringing the total to 210.

**Stevens Hosiery Mills, Inc.**, Hickory, N. C., has started operations on men's hosiery. Capital stock is $100,000. Fred Stevens heads both concerns.

**Ware Knitters, Inc.**, Ware, Mass., has installed a Smith,

**Whatever Nylon can do . . .**

Helanca®

S-T-R-E-T-C-H NYLON YARN

**can do BETTER . . .**

*particularly if it's processed at*

**HEINEMAN'S**

**OSCAR HEINEMAN CORPORATION**

*DIVISION OF AETNA INDUSTRIAL CORPORATION*

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and all synthetic fibers

Helanca licensee, Heberlein Patent Corporation; Chadalon licensee, Chadalon, Inc.; Agilon licensee, Deering Milliken Research Trust; Taslan licensee, E. I. du Pont de Nemours & Co.

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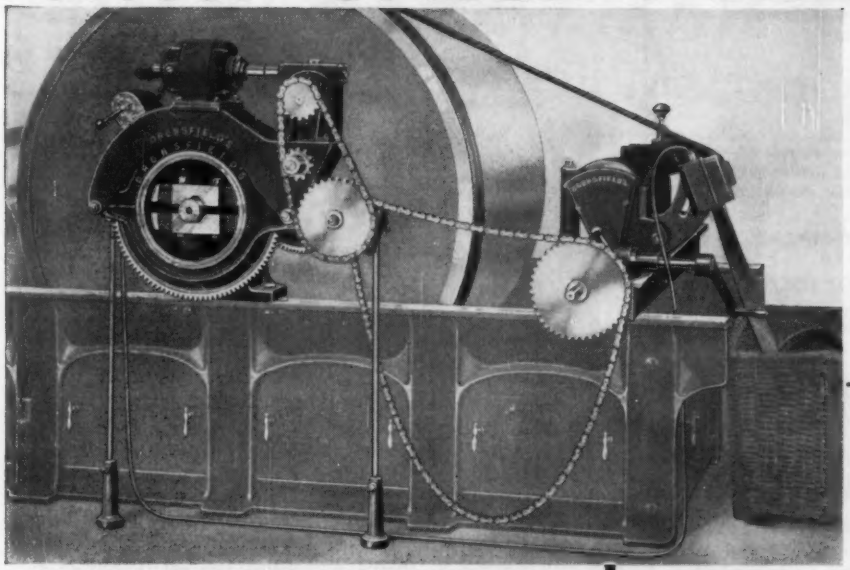
# *Perfect* CARD MOUNTING



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WOOLLEN
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Card Mounting Machine Nº 220 with Power Driving Attachment Nº 249, for clothing Card Cylinders and Doffers.

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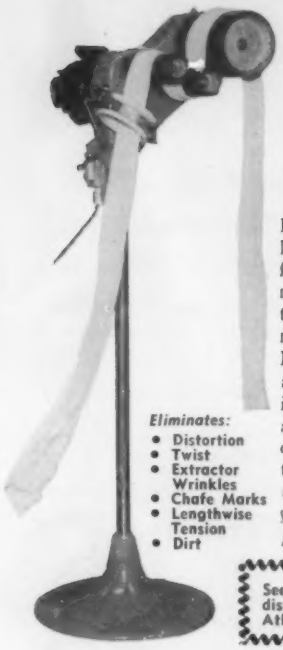
# UTICA *EXTRACTOR LOADER AND UNLOADER for*



- Sorting Wet or Dry Goods from one truck into various trucks as to classification.
- Loading Kiers and Tanks.
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- Conveying goods in the string from floor to floor.

HERE'S a machine that saves time loading, unloading, sorting and transferring goods—wet or dry. Precision made with sealed ball bearings throughout. Pedestal or bracket mounted. Electrically waterproofed. Head swings 360° on ball bearings and locks in any position. Motor, integral with drive, is easily detachable. Drive runs in oil. Pot Eye quickly adjustable. Check the features of this labor-saving machine and you'll see why it's the machine you can't afford to be without. *Write today!*

*Eliminates:*
- Distortion
- Twist
- Extractor Wrinkles
- Chafe Marks
- Lengthwise Tension
- Dirt

See this and other UTICA equipment on display at the KNITTING ARTS EXHIBIT, Atlantic City, Booths No. 160, 161, 162.

## UTICA Novelty and Mill Specialty Co.

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Builders of Textile Machines Since 1903

*Novelty Yarns*

Any construction to your specifications using any fiber for Men's Wear, Dress Goods, Upholstery, Draperies, Automotive, and so on. Twists, Boucles, Ratines, Knots, Nubs ——

*Neva-Tarn Metallic Yarns*

Non Tarnishing Metallics, all constructions of supported yarns on disposable tubes or cones for Knitting and Weaving into all types of fabrics. Additionally – Metallics combined with Novelties.

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NYLON & RUBBER YARN
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*MILTON aluminum alloy Tricot and Section Beams feature CONTINUOUS WELDED CONSTRUCTION*

Drop-forged, heat-treated aluminum alloy heads and extra heavy barrels withstand pressures of nylon and rubber warps.

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MILTON MACHINE WORKS, INC.
MILTON • PENNA.




Drum high-temperature, high-pressure yarn-dye kettle in its dye department. The firm has also purchased the equipment of Style Dress Co., to be used for the expansion of its sewing department.

**Wiscassett Mills Co.**, Albermarle, N. C., is building a 100 x 68-ft. addition to its boarding room.

## DYEING AND FINISHING PLANTS

**A.A.A. Dyers, Inc.**, has purchased a one-story, 20,000-sq. ft., building at Wellsville, Mo. Operations will start soon.

**Broadway Dye Works**, Passaic, N. J., will soon open in the former Hollywood Piece Dye Works plant.

**Fairforest Co.**, Clevedale, S. C., and **Bishopville Finishing Co.**, Bishopville, have merged. Officers and directors of Fairforest head the organization.

**Kendall Co.**, Boston, Mass., will build a new finishing plant at Bethune, S. C. The mill will be built and operated by the Kendall Mills Finishing Div. Lockwood Greene Engineers, Inc., is in charge of the engineering work, and Daniel Construction Co. will do the construction work.

**Osceola Finishing Co.**, Osecola, Ark., a subsidiary of Crompton Co., Warwick, R. I., has opened its new $4,000,000 corduroy-finishing plant.

**Percelay Yarn & Textile Co., Inc.**, Pawtucket, R. I., has installed new equipment to increase its facilities for glazing, quilling, and skein winding and also limited dyeing, bleaching, and mercerizing.

**Philco Dyeing & Finishing Co., Inc.**, a new plant in Paterson, N. J., has started operations in the former Luxor dyeing plant at 146 E. 7th St. The plant contains 30,000 sq. ft. Philip LaMonica, formerly with Burlington Mills, will be president.

**Poughkeepsie Piece Dye Works, Inc.**, Paterson, N. J., is expanding and taking over 75,000 sq. ft. of the former Grant Fabrics Finishing Co.

**Riegel Textile Corp.**, New York, N. Y., will construct a new fabricating plant in Johnston, S. C. The new plant will contain about 15,000 sq. ft.

**Wilson Adams** has been elected a vice president of Cannon Mills, Inc., Kannapolis, N. C.

**Robert Austin** has been named overseer of dyeing at Jewell Brook Woolen Co., Ludlow, Vt., succeeding **Elwood Green.**

**D. F. Barnes** has been named overseer of carding, spinning, and winding at Globe Mills, Inc., Lincolnton, N. C.

**Nelson W. Beilstein** has been named to the administration staff of Cluett, Peabody & Co. of Canada, Kitchener, Ont. **William H. Cleine** succeeds Mr. Beilstein as plant manager of the Stratford, Ont., plant.

**Bernard F. Brady** has been named general manager of Pepperell Mfg. Co., Lewiston, Me. He succeeds **Gilbert D. Harrison.**

**Bernard Brown** has been

**How much credit would YOU extend?**

Client: Garment Manufacturer
Capital: $38,000
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Volume: $600,000

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# MORRIS SPEIZMAN CO., INC.

## Hosiery Mill Machinery

**Booths 170-177**

*We invite you to view some of the newest developments in hosiery manufacturing*

**SARCO**—Pre/post Boarder for men's, children's, misses hose.

**SHOAF:**—Automatic Hosiery Turning Machine.

**"CAROLINA" KNITTERS:**—for men's and women's hose.

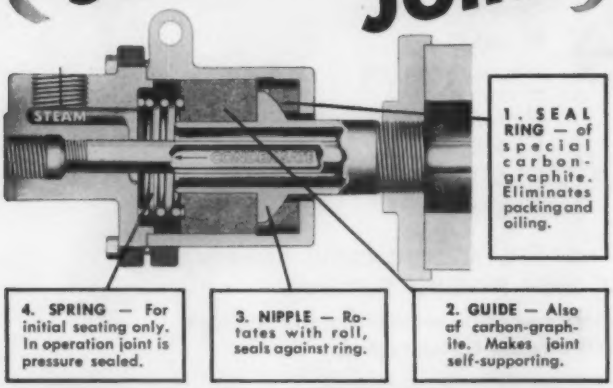
**BOWMAN**—Automatic Transfer applying machine.

**MORRIS SPEIZMAN CO., INC.**

508 W. Fifth St. Charlotte, N. C.

Only 4 internal parts in this self-supporting

Johnson Joint


STEAM
1. SEAL RING — of special carbon-graphite. Eliminates packing and oiling.
4. SPRING — For initial seating only. In operation joint is pressure sealed.
3. NIPPLE — Rotates with roll, seals against ring.
2. GUIDE — Also of carbon-graphite. Makes joint self-supporting.

With this 3000 Series Type S-B2 Joint, an assembly plate can be added at any time; it is used with the Johnson Syphon Elbow, to hold internal parts in position when the head is removed. Write for Bulletin No. S-2001.

The Johnson Corporation

814 Wood St., Three Rivers, Mich.

COLOR MATCHING

DOESN'T HAVE TO BE A PROBLEM

See the ANALYTE COLOR COMPARATOR advertisement in your Textile World Fact File Issue, page 190.

The new ANALYTE COLOR COMPARATOR is the answer.

CROWN ENGINEERING AND SALES CO.

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RAYON PLANTS & TEXTILE MILLS

- DESIGN
- CONSTRUCTION
- MANAGEMENT

1200 N. BROAD ST., PHILA. 21, PA.

MEXICO CITY • CARACAS • MADRID • ROME • ATHENS • TOKYO • CALCUTTA




named vice president of Cinderella Knitting Mills, Denver, Pa.

**Edward E. Burdett** has been named to the new position of assistant to the president in charge of coordination of production at Kanmak Textiles, Inc., Kulpmont, Pa.

**J. L. Channel, Sr.,** has been named a vice president of Opp Cotton Mills and Micolas Cotton Mills, Opp, Ala. **M. J. Dick** has been named a director of Micolas Cotton Mills.

**Hugh G. Chatham, II,** has been elected president of Chatham Mfg. Co., Elkin, N. C. **Albert L. Butler** has been elected chairman.

**William C. Chester** has been named treasurer and controller of Chicopee Mfg. Corp., Athens, Ga.

**D. St. P. du Bose** has been elected to the board of Erwin Mills, Inc., Durham, N. C. **John S. Hill** has retired as a director. **Charles R. Walters** has been elected a vice president of the company.

**Ned Feldman** has been named vice president for administration at Sidney Blumenthal & Co., Inc., New York, N. Y.

**Peter M. Flanigan** has been elected a director of Belding Heminway Co., Inc., New York, N. Y.

**John Gallagher** has been named overseer of finishing at Eastland Woolen Mill, Inc., Corinna, Me., succeeding **J. H. McGill.**

**James E. Gibson, Jr.,** has been named assistant treasurer of Wilkes Hosiery Mills Co., North Wilkesboro, N. C.

**Ernest A. Guttridge** has been named superintendent of the lace division of the Bromley Mfg. Co., Philadelphia, Pa.

**C. H. B. Heath** has been elected president of Manetta Mills, Lando, S. C. **Gilbert B. Heath** has been elected chairman of the board of directors.

**Michael Higgins** has been named dyehouse superintendent at Amoskeag-Lawrence Mills, Inc., Manchester, N. H., succeeding **W. Schod.**

**Aubrey C. Hobbs** has been elected a vice president and technical director of Aberfoyle Mfg. Co. He will be located at Rex Mills, Ranlo, N. C., of which he has also been named a vice president.

**Felix R. Husler** has been appointed manager in charge of all production costs, quality control, and development work at Joan Plush Mill, Woonsocket, R. I.

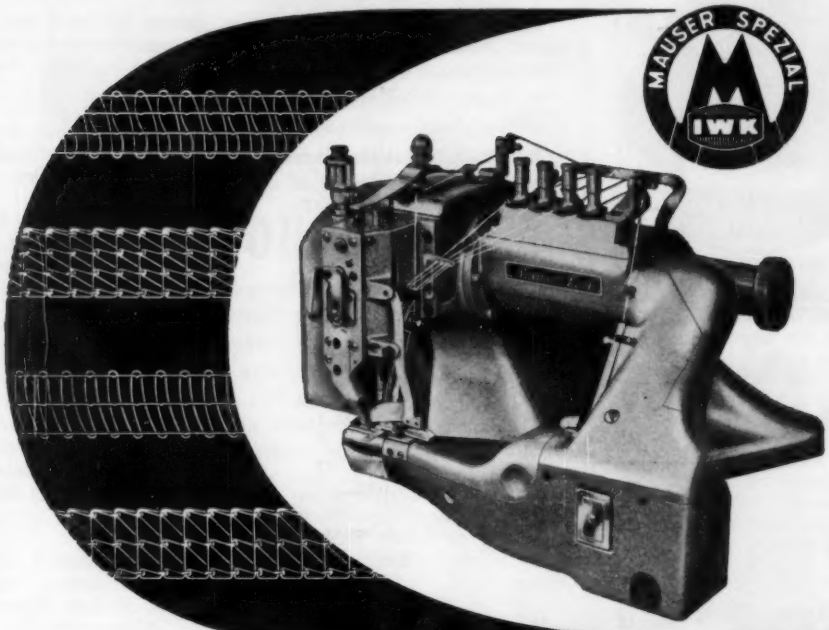
**John Kinash** has been named general overseer of drawing for Collins & Aikman Corp., Bristol, R. I.

**P. A. Koppes, Jr.,** has been named superintendent at Seymour Woolen Mills, Seymour, Ind.

**Howard P. Kreutzer** has resigned as vice president of Louisville Textiles, Inc., Louisville, Ky.

R. W. McCULLOUGH (left) has been named executive vice president of manufacturing and D. F. McCULLOUGH has been named executive vice president of sales at Collins & Aikman Corp., New York, N. Y.

## MAUSER SPECIAL Feed-off-the-arm Flat-seam Machine MAUSER LOCK




with trimmer and differential feed dog producing an extremely elastic 4-needle-covering seam with one lay in thread for the trimming, sewing together and hemming of all kinds of hosiery as well as elastic material.

- Number of needles 3 and 4
- Breadth of seam 7/32" and 9/32"
- Number of stitches per minute up to 2800 and 3400

The automatic lubrication system and the oil circulation controls greatly facilitate the service and maintenance of the machine.

Illustrated leaflets will be supplied on request.

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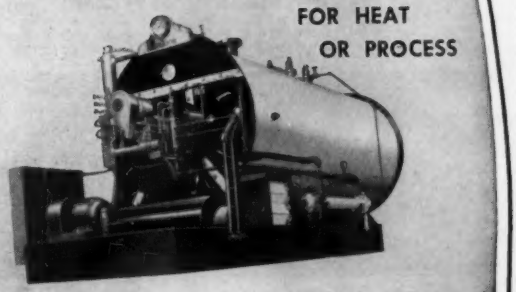
## STEAM

FOR HEAT OR PROCESS



A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 618

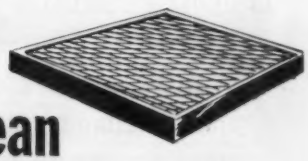
[illegible] COMBUSTION INDUSTRIES

*Factory: Emmaus, Pa.*

*Exec. Offices: Times Bldg., Times Sq., New York N. Y.*

SUPERIOR STEAM GENERATORS

## Air Filters Soaked Clean in only TEN minutes!



"Why, they look like new!", exclaimed the plant superintendent when he examined six air filters that the Oakite Man had just reconditioned. It was a striking demonstration indeed! Before cleaning, the filters had been covered with a clinging, clogging mess of oil, dirt, dust, and cinders. The Oakite Man had merely immersed the filters in a boiling solution of Oakite Composition No. 22 and hose rinsed. Every bit of oil and grime had been completely removed from all six filters—and the entire process had taken only ten minutes! —Another sample of why it pays to consult Oakite first. For more details, call or write Oakite Products, Inc., 42 Rector Street, New York 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING

OAKITE

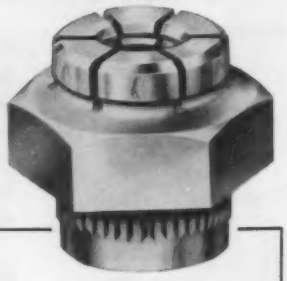
MATERIALS • METHODS • SERVICE

*Technical Service Representatives in Principal Cities of U. S. & Canada*

specify standard

FLEXLOC®

SELF-LOCKING CLINCH NUTS



These one-piece, all-metal locknuts simplify blind mounting because the hollow shanks serve as guides or positioners for screws or bolts during assembly. And since they become an integral part of the material in which they are clinched, FLEXLOCS are particularly useful where equipment must be taken apart and reassembled or where the nuts are difficult to reach. Stocked by authorized industrial distributors in #4 to ¼" in a full range of standard shank lengths. Write for literature and samples of locknuts. STANDARD PRESSED STEEL CO., Jenkintown 35, Pa.

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RALPH E. LOPER CO.
GREENVILLE, S. C. FALL RIVER, MASS.

YOU CAN COUNT ON WAK COUNTERS

- RUGGED
- ACCURATE
- DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

WRITE PHONE OR WIRE WAK INDUSTRIES CHARLOTTE, N. C.

## NEWS ABOUT MEN Continued

**L. O. LeMaire** has been named manager of National Spinning Co., Inc., Washington, N. C., succeeding **John Turner.**

**Dr. Edwin L. Lotz** has been appointed general manager of Glass Fabrics Finishing Corp., Cedar Grove. N. J.

**Joseph Marhefka** has been named overseer of the Blackstone Mills, Inc., Clinton, Mass.

**John C. Martin** has been named plant manager at Wellman Combing Co., Johnsonville, S. C.

**Raymond L. Matthews** has been named superintendent of converting at Sidney Blumenthal & Co., Inc., Rocky Mount, N. C.

**James McKinstry** has been named superintendent of Guild Mills Corp., Laconia, N. H.

**E. M. Odgers** has been named to the newly-created position of vice president in charge of operations at Coopers, Inc., Kenosha, Wis.

**J. William Perras** has been appointed superintendent of Abbot Worsted Co., Seneca, S. C.

**A. Quance** has been named assistant superintendent of dyeing at Robbins Mills, Inc., Clarksville, Va.

**Allan Rathbone** has been named manager of the Dundas Cotton Mills, Dundas, Ont.

**William Schmottlach** has been named superintendent of dyeing at the Great Falls Bleachery & Dye Works, Somersworth, N. H.

**Gregory Shlomm** has been elected president of Woonsocket Spinning Co., Woonsocket, R. I. Other officers elected include **Walter Bareiss,** treasurer; **Theodore Birnbaum,** vice president, and **Harry Halpern,** secretary.

**Leonard J. Solomon** has been named executive vice president of Sheffield Hosiery Mills, Inc., Gilbertsville, Pa.

**Jack Soowal** has been named general plant manager of Novelty Knitting Mills, Philadelphia, Pa.

**Richard W. Weissblatt** has been named general manager of Belknap-Sulloway Mills Corp., Laconia, N. H.

**Frederick S. Whiteside** has resigned as secretary of Pacific Mills, Boston, Mass.

## OBITUARY

**John J. Colony,** 90, a director of Faulkner & Colony Mfg. Co., Keene, N. H.

**Herman H. Gelber,** 54, retired general manager of Astor Knitting Mills, Reading, Pa.

**James A. Groves,** 79, retired secretary and treasurer of Wiscassett Mills Co., Albemarle, N. C.

**Thomas J. Higgins,** former overseer of wool sorting at American Woolen Co., Wood Worsted Mills, Lawrence, Mass.

**Guy O. Hunter,** 68, a director of Echota Cotton Mills, Calhoun, Ga., and Mary-Lelia Cotton Mills, Greensboro, Ga.

**Charles H. Johnson,** 74, retired superintendent of Pilot Mills, Raleigh, N. C.

**John J. Petroske,** manager of Patchogue-Plymouth Corp., Lawrence, Mass.

**Frank R. Storm,** 57, president of Mid-Valley Textile Corp., Pecksville, Pa., and vice president of Clearview Textile Corp., Scranton, Pa.

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# CALDWELL TANKS—

**First Choice of the Textile Industry!**

Caldwell offers the industry a complete tank service, including solid Stainless and Stainless-lined wood tanks and tubs, of any shape or size.

If you're thinking of installing or replacing a tank, let our 60 years' experience in building high-grade tanks serve you. *Send for our catalog, today!*

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VISCOSE RESEARCH—Chemical Engineer or Chemist experienced in the preparation and spinning of viscose yarns for pilot plant of major cellulose producer. P-5974, Textile World.

### SELLING OPPORTUNITY OFFERED

SELLING OPPORTUNITY offered: Salesman wanted—textile machine parts. No objection to non-conflicting lines. Middle West, Far West and New England territories open. SW-5672, Textile World.

### POSITIONS WANTED

QUALITY CONTROL, New York or Mill. 40 years experience, silk rayon and cotton manufacturing and finishing. PW-4848, Textile World.

WANTED: WEAVING overseer experienced on C&K and draper looms now located in South America wants to make change. Available after sixty days. Will consider employment in either United States or foreign country. PW-5724, Textile World.

### POSITION WANTED

**TEXTILE TECHNOLOGIST, B.S. with Honors, University of Manchester. Two years' practical experience, weaving and spinning, in Europe and Great Britain. Excellent references. Any locality acceptable. Reply**

**PW-5804,** Textile World
330 W. 42 St., New York 36, N. Y.

### ATTENTION

**Tricot Manufacturers and Machine Builders**

**Technician and designer with outstanding capabilities, desires change. Novelty fabrics on synthetic yarns. Presently employed with full control. Conversant with all types of warping machines and warp knitting. Available April. Highest references.**

**PW-5897,** Textile World
330 W. 42 St., New York 36, N. Y.

### POSITIONS WANTED

THROWING QUALITY Control Chemist — intensive experience in research and development of new sizing formulations for throwster customer requirements. Thorough knowledge in obtaining highest quality work. Specialist in formulating tailor-made treatments for synthetic yarns plus experience and knowledge in their heat treatment problems. PW-5348, Textile World.

SALES ENGINEERING or Sales Management position wanted: Successful sales record resulting from contact with engineering, research, and executive personnel. Sales, administrative, and manufacturing experience in textile industry. Textile engineering graduate. PW-5148, Textile World.

TEXTILE TECHNOLOGIST — graduating M.I.T., M.S., June 1955. Graduate of L.T.I. '53. Some experience. Looking for position in development and design of industrial fabrics. PW-5811, Textile World.

KNITTER—MECHANIC, broad experience on Raschl-machines wishes to relocate. PW-5708, Textile World.

KNITTER—MECHANIC, broad experience on Raschel-machines, wishes the cooperation of a financially responsible party in the manufacture of knitted goods. PW-5707, Textile World.

**(Continued on following page)**

### AVAILABLE

## OPERATION CHIEF

**Or ASSISTANT in coordination, organization, direction supervision in all departments from raw wool to finished cloth. Up to date in modern equipment in the economical manufacturing of quality fabrics. Over 30 years mill experience in best known textile mills abroad as in USA, from trainee to executive in charge of manufacturing. Will consider consultant or advisory capacity.**

**PW-5870,** Textile World
330 W. 42 St., New York 36, N. Y.

## POSITIONS OPEN

**We can place—Woolen mill MANAGER; supt. knit goods bleaching and finishing; woolen supt.; knit. mill supts., overseers and fixers; supt. jacq. woven label mill; asst. gen. mgr. cot. yarn mills; asst. supt. woolen hosiery mill; woolen, worsted, cot. and rayon designers and asst. designers; expert on Pacific converters running synthetics.**

**OVERSEERS for woolen weaving; woolen finish.; jacquard card cutting (carpets); rayon throwing; wstd. combing and pin drafters; lace dyeing and finishing; foreman coating, shoe fabrics; wool scouring.**

**CHEMISTS and chem. engineers; machinery draftsmen; dyestuffs salesman; felt salesman; industrial-time study engineers; plant engineers; loom fixers; fixer French combs; garnett fixer-foreman; hosiery mach. fixers.**

**If you are available for a good paying position in textiles, it will pay you to have your application in our files. Negotiations are confidential. No fee to be paid unless you accept employment through us.**

**CHARLES P. RAYMOND SERVICE, Inc.**
**294 Washington St. Boston 8, Mass.**
Phone: LIberty 2-6547

### BOSS PLUSH FINISHER

**Must have experience in finishing high pile synthetic fabrics**

**Our people know of this ad**

**P-5718,** Textile World
330 W. 42 St., New York 36, N. Y.

### ADDITIONAL POSITION VACANT

Advertisements
on pages 276 & 280

Additional Searchlight Advertisements on following pages

# SUPERVISOR
## WANTED

**Substantial well-financed textile operation in Pennsylvania requires fabric development supervisor with good academic background and mill experience. Age 30 to 35. Please submit complete resume.**

P-5963, Textile World
330 W. 42 St., New York 36, N. Y.

### POSITIONS WANTED
**(Continued from preceding page)**

TECHNICAL DIRECTOR — Textile Engineer with B.S. and M.S. degrees and 17 years of experience including spinning and weaving production, technical sales, market development and research management. Experience with all major fibers, a specialist in synthetics. Practical and scientific knowledge of all processing from spinning to finished textiles of all varieties. Investor and technical author. Now in a responsible management position. PW-5939, Textile World.

POSITION WANTED as development, design or plant engineer with textile manufacturer. Excellent experience and proven ability in the development, design, installation and operation of textile equipment in most phases of textile manufacturing. Have held responsible positions requiring administrative and supervisory capabilities. PW-5919, Textile World.

THROWSTER, SUPT. or manager 25 years experience. Quality throwing all yarns with southern mill. Knowledge of all weaving operations. Excellent references. PW-5946, Textile World.

TEXTILE SCHOOL man with 30 years practical throwing, weaving, quilling & winding experience looking for new opportunity. Excellent references. Age 50, married. PW-5947, Textile World.

TEXTILE GRADUATE, 29, married, desires to relocate, 6 years experience cotton and rayon carding and spinning. PW-5969, Textile World, 330 W. 42nd St., New York 36, N. Y.

TEXTILE GRADUATE, M.S. degree, 17 years diversified experience in mill operations, from raw material to finished product. PW-6003, Textile World.

I.C.S. GRADUATE in cotton manufacturing. Corduroy cutter 8½ yrs. Recent I.C.S. student 2 yrs. Observant, obedient, World War II veteran, married, sober, age 29. Would like opportunity to develop into a textile position. All replies answered. PW-5975, Textile World.

### WANTED

ANYTHING within reason that is wanted in the field served by Textile World, can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

# PARIS OFFERS
## *a short-cut to success*

Why not shrink your apprenticeship period by attending a **FABRIC DEVELOPMENT STUDY GROUP** in **PARIS?**—For the first time, you can benefit from the personal tuition & 30 years experience in both men's & ladies woolen and worsted fancies, of a well-known Head-Designer-Producer, who intends now to set up a highly up-to-date and concentrated course. No school can offer you this unique opportunity of accelerated training & initiation in research (Fancies & fabric development)—The course will be limited to a max. of 6 persons in the Designing-Room. Only Textile-School graduates or technicians with practical experience should write for information on this Study-Group/or on **CORRESPONDENCE COURSES** which are also available/to "JUCY", 4 sq. Albin Cachot, **PARIS-13,** Fr.

## *SALE OR RENT*
# NEW JERSEY

12,000 Sq. Ft.—High Ceilings—100% Daylight—Excellent Labor Available

**ALBERT M. GREENFIELD & CO.**
**1616 Pacific Ave. Atlantic City, N. J.**

# SEARCHLIGHT SECTION
*Classified Advertising*

EMPLOYMENT: BUSINESS: **"OPPORTUNITIES"** :EQUIPMENT :USED OR RESALE

**UNDISPLAYED —RATES— DISPLAYED**

$1.20 per line, minimum 3 lines. To figure payment count 5 average words as a line.

POSITIONS WANTED undisplayed rate is one-half of above rate, payable in advance.

*Box Numbers*—count as one line.

*Discount of* 10% if full payment is made in advance for 4 consecutive insertions.

**EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.**

*Individual Spaces* with border rules for prominent display of advertisements.

The advertising rate is $12.65 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

*An advertising inch* is measured ⅞" vertically on one column, 3 columns—30 inches—to a page.

**SEND NEW ADVERTISEMENTS to the New York office, 330 W. 42nd St., N. Y. 36, for May issue closing April 18th.**

## *Capital to Invest*

***Our corporation has a large amount of surplus cash* and the board of directors are desirous to invest by purchasing another company of substantial worth in the textile manufacturing field in the New England area.**

**BO-5876,** Textile World
330 W. 42nd St., New York 36, N. Y.

WANTED
## COMMISSION THROWING

**Spindles available for processing NYLON, DACRON, ORLON for the WEAVING, TRICOT, and HOSIERY trade. Well versed in constructions of stretch yarns.**

**CW-5930,** Textile World
330 W. 42nd St., New York 36, N. Y.

## WANTED
## NARROW FABRIC PLANT

**Give information as to location and equipment in detail.**

**BO-5910,** Textile World
330 W. 42 St., New York 36, N. Y.

# FOR SALE
*(Additional For Sale Advertisements on following pages)*

### PREPARATORY
1—48" Hunter Stock Squeeze Set
1—36" D. & F. 6 bar Mixing Picker
1—40" Opener, 18 bars hook teeth
1—48" D. & F. Fearnought Picker
1—10' Sargent Cone Duster, 1943
6—Shoddy or Waste Pickers
2—48" P. & S. Feeders, 1950
8—30" to 70" wide Feeders

### WINDING & WARPING
1—Foster 102 Cone Winder, 100 sp.
1—Foster Mod. 12, skein to cone or tube Winder, 7" trav., 24 sp.
1—Foster Mod. 12, skein to con or tube Winder, 6" trav., 40 sp.
UNIVERSAL #50 WINDERS REBUILT TO SPEC.
1—Universal Mod. 45 Winder, 10" trav.
2—Haskel-Dawes 8" x 10" Twisters
4—D. & F. 100" Pinless Warpers
1—Warp Compressor 120" Beamer

### FINISHING
1—P. & W. 72" x 36" Semi-Decater, 1948
1—set (6) Horizontal Dry Cans, 70" x 36"
1—Wet-out Tank, pneumatic squeeze, 62"
2—Teasel Gigs, double cylinder, 60"
1—Scray, 66" mtr. drv., s/s
2—Nappers, Gessner, D.A., 18 roll, 1942
1—Napper Grinder, 84", Roy
1—Inspection Mach., Birch, Power, 1943
1—Cloth Doubler, open rolling, P. & W. 66" machine
1—Cloth Open Rolling Mach., Windle, 66"
1—Steam Lustering Mach., 72", P. & W.

### MISCELLANEOUS
Mt. Hope Spreader Rolls
Macbeth Color Matching Lamps
Singer Overlocker, mtr. drv. with table
Stock blowers, piping, switches
Reeves, Link-Belt var. speed transmissions
Franklin sample pckg. Dye Machine

# FRANK W. WHEELER CO.
1837 E. Ruan St. Phones: Jefferson 5-4771-4772 Philadelphia 24, Pa.
*Reputable Dealers for over a quarter of a century*

## Partial Listing

200—UNIVERSAL #50 WINDERS
2—FOSTER SKEIN TO CONE WINDERS
4—6 SPINDLE UNIVERSAL #8 TUBERS
1—SCOTT MODEL Q TESTER 2000 LB. CAPACITY
1—16 SPINDLE SARGENT BALLING MACHINE

N. Y. C. REPRESENTATIVES FOR NEW UNIVERSAL WINDING CO. MACHINERY

# *Gaines*
**FOR BEST VALUES IN REBUILT TEXTILE MACHINERY**

**GAINES TEXTILE MACHINERY CO., INC.**
**141 WEST 17TH ST., NEW YORK 11, N. Y.**

### ALSO
2—20 SPINDLE UNIVERSAL ROTOCONERS
2—SINGLE SPINDLE UNIVERSAL #6 TUBERS

***List Your Surplus Equipment With Us***

*Additional Employment Advertising on page 280*

1805 AUCTION 1955

## AT PUBLIC AUCTION

## Machinery and Equipment of

# EMPIRE WORSTED MILLS, Inc.

***Manufacturers of High Grade Worsteds***

**31 Water St., Jamestown, N. Y.**

## THURSDAY, APRIL 21, 1955, at 10 A.M.

**on the premises**

**3 Sets of Drawing, each comprising:** Holsworth Intersecting **Gill Reducers 1953/52/51.** S-L, Lowell and P. S. Ring Reducers, Rovers and Fly Frames. **Holdsworth Int. Gill, Ball Deliv.;** 18 S-L, Lowell and Holdsworth S. H. Int. Gill Boxes. **5 James Smith and P. S. & Stells Noble Combs 1951/50/49,** 7 J. S. and C. & K .Combs. 7 Sets Worsted Cards, Scouring Unit 3-Bowl; Wool Opener.

**9 Whitin 224-Sp. T. D. Herring Worsted Spin. Frames 1948, Mod. BW. 3" R.** S-L, Lowell and Prince Smith 192 & 200 Sp. T. D. Herring Spin. Frames 2¾" R. Converted Frames. Cap Spinning Frames.

**6 Whitin 200-Sp. T. D. Herring Twisters 1946, 3½" Ring.** S-L Dolly Roll Twisters. **2 Foster 80-Sp. Hi-Speed Wood Tube Winders 1949,** Mod. 102. 2 Foster Wood Cone Winders, Mod. 102.

**3 Davis & Furber Pinless Dressing Reels 92" 1952/50.** Altemus Pinless Dressing Reels.

**2 Whitin-Schweiter Auto. Filling Winders 1945,** Each with 42 Spindles in Tandem with Auto Loading Device.

**Riggs & Lombard S. S. 8-Sp. Top Dye Kettle 1944,** S. S. and Cypress 8/4/2-Sp. Top Dye Kettles. Klauder-Weldon Skein Dyer, Franklin Process Dye Unit. **Rodney-Hunt Tru-Shade Tot-Enc. S. S. Piece Dye Kettle 1947.** James-Hunter Washer 1947, **Riggs & Lombard B. B. Express Fulling Mill 1944/43.**

**Kenyon Pin Tenter Cloth Dyer 1949**

**P. & W. (Davidson) 3-Blade Shear 1949/50 68"**

**David Gessner Hi-Speed Cloth Press 1951, 72"**

**David Gessner Hydrolizer Machine 1951, 72"**

**48 C. & K. Converted Auto. Int. Looms 72" R. S.;** 60 C. & K. Int. Box Looms 72" R. S. **H-W Yarn Conditioner,** Semi-decater, Cloth Conditioner, Sargent Back Wash Unit with Dryer and Gill Box. Hunter 2 and 3 Bowl Crabs, Hot Air Slasher, Kenyon Washers, Scutcher 78", Jack Spoolers, P & W 4-Roll Brush, 2 Toledo Cloth Scales, P & W Folders, Tacking Machine, Centrifugal Extractor 54", Rotary Mill Sewing Machines with Merrow Heads, Etc.

**Approx. 7000 Lbs.** 2-Ply Worsted, Rayon and Asstd. Novelty and Decorative Yarns; Various Colors.

**Approx. $12,000 Inventory Cost** of Open Cans of Dye-stuffs, Asstd. Ciba, Geigy, National, Dupont, General and Other Brands. Starch, Penetrolin, Oils and Acids.

**Miscellaneous:** Factory Box Trucks, Roving and Gill Box Cans, Spools, Bobbins, Comb Circles, Machine Parts, Gill Box Aprons, Scales, Blower, Shafting, Steel Bins and Electric Motors 220/440 Volts.

***Descriptive illustrated catalogue upon application to***

## SAMUEL T. FREEMAN & CO.

***Auctioneers***

***"A century and a half of selling at auction"***

**1808-10 CHESTNUT STREET, PHILADELPHIA 3, PA.**

**80 Federal Street, Boston 10, Mass.**

# FOR SALE
# MACHINERY - EQUIPMENT - SUPPLIES
## WESLEY MASON MILLS LTD. Cap de La Madeleine, Que.
### Includes Cotton Carding and Spinning System for Acetate Yarns. Winding, Weaving, Laboratory, Office, etc.

*Plant open daily for inspection. Partial list of items below. You can buy as little or as much as you like.*

**SPINNING UNIT**

10—S-L 40" Cotton Cards 1923-46
4—D&B 40" Cotton Cards
2—Parks Cramer Turbo Hd Cleaning Systems 1952-3
4—S-L 60 x 9" ga 10x5 Slubbers FS2 Longdraft (1948)
1—S-L 84 spdl. 10x5 Slubbers FS2 Longdraft (1951)
1—S-L 144 spdl. 8x4 Rover FS2 Longdraft (1948)
42—Del S-L Whitin Drwg. 12" cans
800—Fiber 12x36 Roving Cans
9—Whitin 264 spdl. x 3¼" ga x 2" Ring Warp Spg. M.D.
4—F&J 240 x 3¼ x 2½" Ring Tape Drive Spg. S-L Roth Long Draft. M.D.
4—Whitin 216 x 4 x 2½" Ring Warp Spg. Casablanca Long Draft. M.D.
4—Whitin 156 x 4 x 2½" Ring Warp Spg. Regular Draft. M.D.
6—S-L 168 x 3½ x 2½" Ring Roll Twisters. M.D.

**WINDING - WARPING**

1—Uni 90 spdl. Mdl. 44 Lot) Cone. C.I. rolls. 9"-36" paper cones. 1949-51.
1—Foster 100 spdl. Mdl. 102 Paper Cone Winder 9"-36".
8—SHEARER 10 spdl. AUTOMATIC QUILLERS. Adj. to 10⅛" bobbin. 1949-51 (4 used only 6 mos.)
11—Uni 20 spdl. #90 Quill Winders for silk, rayon, etc.
6—Uni 6 spdl. #50 Winders. Rayon cones. M.D.
2—Entwistle 54½" Hi-Speed Beam Warpers
2—Universal 540 & 696 Live End Magazine Creels. Elec. Stop Motions

**WEAVE**

106—C&K 52-56" Mdl. S-3 Shuttle Change Automatic Looms. M.D.
98—Draper 68-74" Mdl. H Automatic Bobbin Change Looms. M.D.
1—Terrell Utsman Dble. End Bobbin Stripper.

**SLASHER**

1—Johnson 11-Can 66" x 22 Tinned Copper Can Slasher. 60" Dble. Dip Size Box. 72" Roll on Head End—Ser 947. Controls & M.D.

**LAB & TESTING**

2—Suter 20" Twister Testers
1—Suter Sgl. Strand Yarn Tester
1—Suter Seriplane
1—Scott Mdl. DH Yarn Tester. M.D.
1—S-L Portable Type Sliver Evenness Tester. Ser 397, yr. 1948. 110V. W/attachments & case.
1—B&S 1½ yd. Yarn Reel.
2—B&S #980 Grain Scales.
1—Ferranti Clip-on Ammeter & Case.
1—Stutz & Co. Twist Counter & Meas. Mach. for Silk.

**OFFICE**

Typewriters—adding machines—calculators, etc.

Send for list.

**Send for complete detailed catalog.** **Address all inquires to - Exclusive Sales Agents -**

## FRANK G. W. McKITTRICK CO.

78 FLETCHER ST. *Tel. - GLenview 8-6391* LOWELL, MASS., U.S.A.

**TEXTILE MACHINERY DEALERS - WOOLEN - WORSTED - COTTON - SYNTHETIC**

---

# LIQUIDATION SALE

**KILBURN MILL TRYON, NORTH CAROLINA**

23—Luther and Morrison Thread Glazers, Also 6"x3¾" Spools
1—Progressive Label or Ball Banding Machine, Improved Jaw Mechanism
3—Universal #44 Winders, Cone, ⅜" or 1⅝" Tube Spindles
22—Universal #50 Winders, King Spool, Cone, Doubler, ⅜" Tube
2—Baines (Engl'sh) Automatic Thread Spoolers, Guide Sharpener & Hobs
1—Peerless 7 Station Thread Spool Stamper
2—Obermaier 300# Stainless Steel Package Dyers, Spare Carriers
1—Obermaier 300# Cast Iron Pressure Extractors, Pump & Motor
1—Obermaier 100# Stainless Steel Pressure Extractor, Pump & Motor
1—Lewis-Shepard Electric Fork-Lift Truck, Spare Battery & Charger
1—Electric 1 Ton Hoist, 18' Monorail Crane & 80' Track
1—Lot 18000# Galvanized #15 Gauge Wire Strapping (U. S. Steel Corp.)

**ALSO SUPPLIES**

## JAMES E. FITZGERALD

EXCLUSIVE SELLING AGENT

10 PURCHASE ST. TEL. 8-5616 FALL RIVER, MASS.

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*WANTED*

**HASKELL-DAWES NO. 2 FORMERS**

2—Spindle Machines for 12"x14" Bobbin
Advise Location—Condition—Price

*FOR SALE*

**HASKELL-DAWES 8"x10" FORMERS**

Four 2-Spindle Horizontal Haskell-Dawes Formers or Twisters for 8x10 Bobbin

**PLYMOUTH CORDAGE COMPANY**
PLYMOUTH MASSACHUSETTS
Mr. K. D. Roberts—Phone Plymouth 8

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**FOR SALE**

Large package mule Johnson & Bassett 2½" gauge J. & B. 2" gauge mules, Collar boards, step rails, bottom rolls, and parts for mules. Iron cylinders Doffers, Workers, and Strippers, Cards, Card Feeds, Pickers, and Twisters.

**DOYLE & MILLER**
Main & Pensdale Street Philadelphia, Pa.

---

**FOR SALE**

## 25 DRAPER LOOMS

46" wide—like new—will sacrifice

**OSTERNECK CORP.**
179 W. Jefferson St. Phila. 22, Pa.

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MLC *SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY OF QUALITY*

A Dealer of Recognized Reliability For Over 25 Years

**MACHINERY LIQUIDATING CO., INC.**
520 Fifth Ave. MU 2-5844 N.Y. 36, N. Y.
1436 John Ringling Blvd. Sarasota, Fla.

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## CREEL,

OVEREND MAGAZINE CONE, SIPP-EASTWOOD TYPE DX, SERIAL 9093
*NEVER USED, SACRIFICE*
**FAYM PRODUCTS**
1072 Atlantic Ave., Bklyn 38, N. Y.
UL 7-2635

---

***FOR SALE:***

SACRIFICE:—30 Arm Porcelain Buhlmann Skein Dye Machine—Complete with Motors—Pumps—Tanks, Etc. Perfect Condition.

FS-5879, Textile World
330 W. 42 St., New York 36, N. Y.

# COMPLETE LINE

**100—Atwood D.D. Twisters**
½ lb. pkge.
*Excellent condition.*

Throwing, Weaving, and Narrow Fabrics Machinery & Equip. *at reasonable prices and immediate delivery*

**LOWER YOUR PRODUCTION COSTS!**

**20—Universal #50 Coning Machines**
For Nylon—with pineapples, L-Drive, Gear-Gain. Motorized.

**60—Spindles 1946 Whitin Schweiter**
Excellent condition. Some with Kiddie tensions.

**1-1950 Hermes Shearing Machine**
with rolling and sewing attachments

**1—Nash Model 88 BOBBIN POLISHER**

**2—1950 H & W Yarn Conditioning Boxes**
Type ST-2. Large sizes.

**A Variety of C & K and DRAPER BROAD GOODS AUTOMATIC LOOMS**
S-6's—S-5's with S-6 clutches—Draper XD's Slashers—Warpers—Automatic Quilling—Quills—Harness Frames—Drop Wires—Etc. Please send us your inquiries.

**NARROW FABRICS**

**1—10 CAN S.S. FINISHING MACHINE**
30' face. Chain driven. Ball bearing. Quetsch drive.

**12—STANDARD FLETCHER 15'8" LOOMS**
Heavy duty crank shafts. Cam motions. Motorized

**1—3 CAN FINISHING MACHINE**
18" face, let-off, take-up, variable speed drive and calendar.

***All items subject to prior sale.*** **WRITE, PHONE OR WIRE FOR FURTHER INFORMATION.** ***This is only a partial listing.***

**Wm. Rabinowitz & Sons**
TEXTILE MACHINERY, BOBBINS & SUPPLIES
214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

**MILLER MACHINERY CO.**
66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8
**Textile Machinery and Supplies**
BOUGHT AND SOLD
Warpers • Winders & Quillers • Looms

**HOISERY MACHINES**
*used and rebuilt*
KNITTERS — RIBBERS — LOOPERS
CYLINDERS — DIALS — TRANSFERS
HOSIERY NEEDLES AND PARTS
JOS. BRESANI
N. W. Cor. Hancock & Somerset Streets
Phila. 33, Pa.

WE BUY AND SELL
**TEXTILE MACHINERY**
THROUGHOUT THE WORLD!
**GEORGE W. EGAN**
*"The Machinery Man Known Everywhere"*
WOONSOCKET, R. I. - Phone Woon 3258

**CALENDER FOR SALE**
Textile Finishing Machinery Co. 5-roll (2 steel, 3 paper) 50" hydraulic, hand-operated smoothing calender; 40 hp Westinghouse AC 220-volt motor; steam-heated; max. pressure—18,000 psi; gross weight—17 tons; 1 extra corn-husk roll; excellent condition; packed for immediate shipment; sacrifice price for quick sale.
L. E. CARPENTER CO.,
Wharton, N. J. DOver 6-2020
Mr. George Saupe, Plant Supt.

## REBUILT and LATE MODEL.

1—P&S STAPLE CARD 60" pin lagged cyl.
1—A&G CLOTH CONDITIONER 84".
3—P&W and Gessner SEMI-DECATURS 72".
38—W&S PIN DRAFTERS, Duals and Quads.
6—R&L and R. Hunt S.S. DYE BECKS, 18"—70"—12'.
1—Kenyon PIN TENTER DRYER, 12 pass, 66" Air Fin Heaters.
1—Kenyon STRAIGHTAWAY PIN TENTER DRYER, 90' x 72" with enclosure.
1—Hunter CLOTH SHRINKING RANGE, 78" with Padder and Dryer.
1—Gessner Vacuum EXTRACTOR, 72".
2—Whitin BROADBAND FEEDS 48".
4—C&K W3 LOOMS, 76" auto.
12—C&K W3 LOOMS, 82" auto.
6—C&K LOOMS, 110" auto.
4—Gessner and P&W NAPPERS, D.A., 72"—80".
1—S&L Combination OPENER & FINISHER PICKER Unit 40".
2—D&F KNIT GOODS NAPPERS, 80".
1—Butterworth S.S. 256 PACKAGE DYEING MACHINE.
1—C&M PICKER, 12 har, 48".
1—P&W Davidson 66" HI-SPEED SHEAR, 3 Blade, B.B., Filtering Cabinets, etc.
1—C&M SINGER, 3 Brass Burners 84".
1—Terrell "L" BOBBIN STRIPPER.
10—Whitin FW3 SPINNING FRAMES, 4½" gauge, 200 spdls. ea.
12—Whitin F2 Long Draft SPINNING FRAMES, 4" gauge, 204 spdls. ea.
1—Van V1. TENTER FRAME 20' x 57".
1—McCreery PIN TENTER FRAME, 25' x 78".
1—B-C Portable WARP TYING UNIT, Model K.
4—P-S Universal TWISTERS, 120 spdls. ea., 6" gauge, 4½" ring.
57—Spindles Whitin Schweiter MS WINDERS.
2—Foster #102B CONE WINDERS, 120 spdl. units.

**McDOWELL ASSOCIATES INC.**

General Offices: 41-E. 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front,
Dock & Water Sts., Hudson, N. Y.
Phone: Hudson 8-3211

3 ARNOLD RUBBER COVERING MACHINES

2 NATIONAL LOOP DRYERS MODEL F&G

**120 UNIVERSAL NO. 50 CONERS**

"L" DRIVE-GEAR BOX "A" 3°30'

30—WITH PINEAPPLES

TAKE UP SHAFTS
40 M—3¼" T. x 4" H.
20 M—4" T. x 4" H.

2 ATWOOD REDRAWS

## 3 PARAMOUNT HIGH PRESSURE STEAM BOXES FOR HELANCA - 325° +35LBS

1—5 B DOUBLER U.S.—3½" RING 6"T

5—ATWOOD DOUBLERS 3¼" RING—100 SP

12 UNIVERSAL 250 B SIZING MACHINES

350 M Fiber HD. Spools 4½" T. x 3⅞" HD

20 ATWOOD D. D. Uptwisters Model 110

20 ATWOOD - 10BS

50 D.D. 8 Ounce Pkg. Atwood

Uptwisters for Helanca 2 H&W Yarn Conditioners

6—RUG BROADLOOMS

1 RUF SLITTER WITH REWINDER

5 INSPECTION FRAME 1 WITH TRIM MASTER

***PARTS & SUPPLIES FOR CONERS, DOUBLERS & TWISTERS***

**BOBBINS — SPOOLS — QUILLS — All Sizes & Types**

**PENNSYLVANIA SPOOL & EQUIPMENT CO.**

530 N. FULTON ST. ALLENTOWN, PA. Phone 3-7545

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## *FOR SALE*—FINISHING MACHINERY

27—50" S/S VV Dye Jiggs.
1—72" Perkins (new) Bin Piler.
1—50" VV 3 Roll BB Calender.
1—50" Morrison 3 Roll Calender.
1—60" Textile (Simpson type) two (2) iron roll Batcher.
Merrow Sewing Machines 60 D3B and 60 ABB complete with Motors & Tables.
2—66" face Birch Bros. Scutchers with Squeeze Rolls and MD.
1—S/S Cook P N Detwister with MD.
3—84" Cutiss & Marble Doublers & Tacking Machines with 1 HP 220/3/60 motors.
1—Textile 20'x90" (closed gears) Tenter Frame with Gas Burners and MD.

*Also Available:* Dry Cans, Quetchers, Reeves Drives, Spare Calender Bowles, Motors, etc. *Write for Catalogue.*

**PETER JASWELL AND SON INC.**

*Consulting Engineers and Manufacturers Agents*

1741 FALL RIVER AVE., SEEKONK, MASS., Telephone • CHestnut 1-2309

"ON ROUTE 6 BETWEEN FALL RIVER AND PROVIDENCE"

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## REBUILT MACHINERY FOR IMMEDIATE DELIVERY

1—Parks & Woolson 72" Decatizer, Nash Pump & Motor
1—V. V. Tenter Frame 60' x 60" S/S Clips
1—W. & J. Tenter Frame 30' x 96"
2—V. V. 3 Roll Silk Calenders M. D.
1—Hercules 48" Self Balancing Extractor open top side mounted Motor
1—V. V. 42" Self Balancing Extractor M. D.
1—Set of 21 Dry Cans 72" x 23"
1—54" Verduin Hydraulic Embosser
1—10 Color V. V. Ribbon Printing Machine
2—Van Vlaanderen Tubers 64"
3—Paterson Tubers 64"
2—Paterson Beamers 60"
1—Measuregraph 60" Variable Speed Tubing & Examining Machine
1—Hermas Measuring & Inspection Machine 58"
2—60 gal. copper Jacketed Kettles, with Agitators M. D.
1—Elliot & Hall Flat Folder 54"
Motors & Drives of Various Sizes

1—60" VERDUIN HYDRAULIC 40 TON CALENDER
6—60" VERDUIN S. S. JIGGS
1—4 COLOR TEXTILE PRINT MACHINE 68"
1—2 COLOR TEXTILE PRINT MACHINE 68"
1—72" PNEUMATIC PADDER, 2 NEW RUBBER ROLLS
1—54" HINNEKENS BOIL-OFF MACHINE

SHerwood 2-7666 SHerwood 2-7667

Moe Blank

DOMESTIC TEXTILE DYEING & FINISHING MACHINERY EXPORT

523-525 E. 18th ST. PATERSON 4, N. J.

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*POSITIONS VACANT*

## ENGINEERS

**Chemical & Textile**

**IMMEDIATE OVERSEAS ASSIGNMENTS**

with

*Celanese*

for

**PRODUCTION STAFF**

These are permanent positions with excellent future potential for individual growth in a leading organization with diversified activities in the U. S. and abroad. Present openings are in Celanese's yarn plants in Latin America.

The positions require graduate Chemical or Textile Engineers, age to 40, preferably with experience in the manufacture of filament yarn and staple.

*Please submit complete resume, including salary requirements, to Personnel Dept.*

**CELANESE CORP. OF AMERICA**

P.O. Box #1414, Charlotte, North Carolina

---

**WE NEED A MECHANICAL OR TEXTILE ENGINEER**

With a broad understanding of the manufacture of textiles. Interested in developing new plastic products for use in textile manufacture from the market development point of view. Please submit detailed resume.

**UNITED STATES RUBBER COMPANY**
Chicago Die Mold Division
4001 W. Wrightwood Ave. Chicago 39, Ill.

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## GRADUATE MECHANICAL ENGINEER OR TEXTILE ENGINEER

WITH BROAD MECHANICAL ENGINEERING TRAINING

is needed by manufacturer of high standing located in Southeastern Massachusetts. Primary interest in industrial research essential. Work involves fiber technology, process development and new product research. Should be recent graduate, with military service completed. 3-5 years industrial research experience desirable but not essential. Salary dependent on qualifications.

P-5625, Textile World
330 W. 42 St., New York 36, N. Y.

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## REPRESENTATIVE WANTED

Gladwin Plastics, Inc of Atlanta desires additional representation in areas not now being covered. We are manufacturers of Sliver Lifting Frames for drawing frames, tubing for creel rods on spinning frames and Fiberglas reinforced plastic boxes for doffing spinning frames and battery filling on looms. We desire agents or representatives for Canadian Territory, middle Atlantic States, mid-west states, southwest area, California and all foreign territories.

***Reply direct to* 275 Houston Street, N. E. Atlanta, Ga.**

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### COTTON AND SYNTHETIC SPINNING AND WEAVING MILL

**53,000 SPINDLES, 1700 LOOMS**

Real Estate: 350,000 sq. ft. brick mills and warehouses

Machinery:

2—Lines H & B Opening, Blending and Bale Breaking—1946.
4—H & B Single Process Pickers, 40" wide—1946.
28—H & B Cards, 40" wide, 28" doffer, spindle back.
56,000—Spindles—Whitin L.D. and Super-Draft Spinning, 3" gauge and 2¾" gauge.
1—Barber-Colman Spooler, 306 spdls., Type C, Model KK—1948.
1—Abbott Quiller, 120 spdls., w/hoist—1952.
1—Whitin Schweiter Winder, 42 spdls., Whitin Bobbin Loader.
48—Draper XD Looms, 54" reed space, dobby, Diehl drive—1951.
96—Draper XD Looms, 54" reed space, dobby, motor—1942.
354—Crompton & Knowles C6 Looms, 4 x 1 box, 52" r.s., motor—1941.
42—Crompton & Knowles C6 Looms, 4 x 1 box, 56" r.s., motor—1941.
68—Crompton & Knowles C6 Looms, 4 x 1 box, 66" r.s., motor—1946.
158—Draper Model E Jacquard Looms, 40", 400 hook.
4—Saco-Lowell Slashers, 2 cyl., 57" wide, Brown controls.
10—Curtis & Marble Clip Spot Shearers, 57½" wide.
5—Sipp Horizontal Warpers with Sipp Creels.
1—Cocker Hi-Speed Warper, 54¼" wide, no creel.
1—Hygrolit Yarn Conditioners, Model AY—age—1949.
4—Barber-Colman Portable Tying-In, Model K and LL.
3—Foster Winders, 120 spdls., Franklin Spgs.—1952.

## CLUETT, PEABODY & CO., INC., NORTH GROSVENORDALE, CONN.

### MODERN FINE COMBED COTTON MILL—76,000 SPINDLES

Real Estate: 400,000 sq. ft. brick mills and warehouses

Machinery:

2—Lines complete Saco-Lowell Opening, Cleaning and Picking.
112—Saco-Lowell, Saco-Pettee and H & B 40" cards.
208—Deliveries Saco-Lowell Controlled Draft Drawing Frames—1952.
16—Saco-Lowell FS2 Roving Frames, 10 x 5, 120 spdls.—1952.
76,000—Spdls. Whitin and H & B Spinning Frames.
1,100—Spdls. Whitin BB Twisters, ¾" ring, 4½ gauge.
6—Abbott Quillers, 130 spdls., w/hoist—1952.
1—Barber-Colman Quiller, Model EBW, 30 spdls.—1952.
3—Bachmann-Uxbridge Gentle Air Slashers—1952.

### IN STORAGE

1—Werner Tenter Frame 50' long x 60" wide, enclosed gears.
12—Werner Dye Jiggs, 50" wide, new rolls, stainless steel.
24—Copper Dry Cans 60" wide x 23" dia.
1—Werner Pneumatic Padder 50" wide—1947.
1—Van Vlaanderen Pneu. Embossing Calender 54" wide—1950.
1—Van Vlaanderen Palmer Tenter Unit, 50' long x 60" wide.
7—Van Vlaanderen Stainless Steel Duplex Dye Boxes, 3—8', 4—6' wide.

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1—680 Live Ends Magazine Cone Creel with DX Tensions.
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16—Collins 200 spindle Twisters: 3" Rings, 4¼" Pitch, 8" Bobbin Traverse 10" dia. cylinders, 10 HP Motor, etc.
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23—Noble Combs with Circles.

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1—60" PADDER, 2—8" RUBBER ROLLS. (NEW RUBBER)
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70—1hp 550v 1800 Diehl, West. and G.E. various types
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**$7.50 without $8.50 with**

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Also battery parts, let-offs, drop wires, heddles and frames, dobbies, arches, gears, beams, etc.

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B. Building Construction and Maintenance, Paints, Yard Equipment. Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth Room Equipment and Supplies
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O. Materials and Components for Machinery and Equipment
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Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting and Winding Equipment and Supplies

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| | | |
|---|---|---|
| Abbott Machine Co. | 248 | T |
| Acrometal Products Inc. | 261 | T |
| Alemite Div., Stewart-Warner Corp. | 158 | M |
| Allen-Bradley Co. | 3rd Cover | F |
| Allen Mfg. Co. | 242, 246 | O |
| Allentown Bobbin Wks., Inc. | 218 | T |
| Allis-Chalmers Mfg. Co. | 14-15 | F Q |
| American Crayon Co. | 262 | E L R |
| American Moistening Co. | 16 | A |
| American Schweiter Co. | 26 | T |
| American Viscose Corp. | 40-41 | P |
| Anheuser-Busch, Inc. | 196 | C |
| Appleton Machine Co. | 240 | F |
| Armour & Co. | 243 | C |
| Armstrong Cork Co. (Cots) | 22-23 | T |
| Armstrong Cork Co. (Roll Covering) | 239 | T |
| Arnold Hoffman & Co., Inc. | 35 | C |
| Atkinson, Haserick & Co. | 172 | T |
| Atlantic Rayon Corp. | 254 | G |
| Atlantic Steel Co. | 250 | O |
| Aurora Pump Div. The New York Air Brake Co. | 214 | H |
| Barber-Colman Co., Textile Div. | 265 | R |
| Bellows Co., The | 154 | H O |
| Bemis Bro. Bag Co. | 212 | P |
| Bendix Aviation Corp. Eclipse Machine Div. | 244 | T |
| Binney & Smith Inc. | 266 | E I R |
| Boger & Crawford | 38 | G |
| Borne, Scrymser Co. | 186 | C |
| Brainard Steel Div., Sharon Steel Corp. | 12 | P |
| Bristol Co., The | 60-61 | K |
| Brush Electronics Co. | 190 | K |
| Buffalo Forge Co. | 249 | A |
| Butterworth & Sons Co., H. W. | 150 | E |
| Caldwell Co., Inc., W. E. | 275 | B E |
| Celanese Corp. of America Chemical Div. | 57 | C |
| Century Electric Co. | 33 | F |
| Cities Service Oil Co. | 207 | M |
| Clark Equipment Co. | 47 | P |
| Cleveland Tramrail Div., The Cleveland Crane & Eng'g. Co. | 236 | P |



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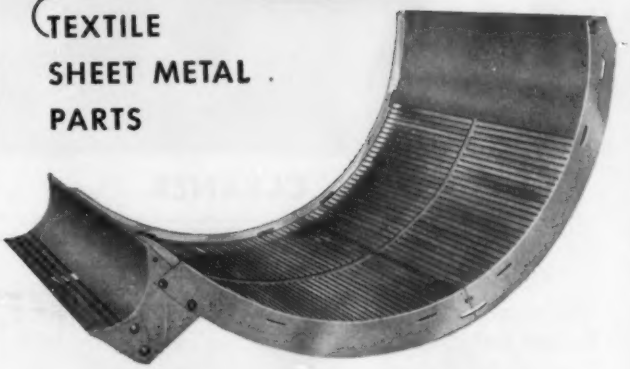

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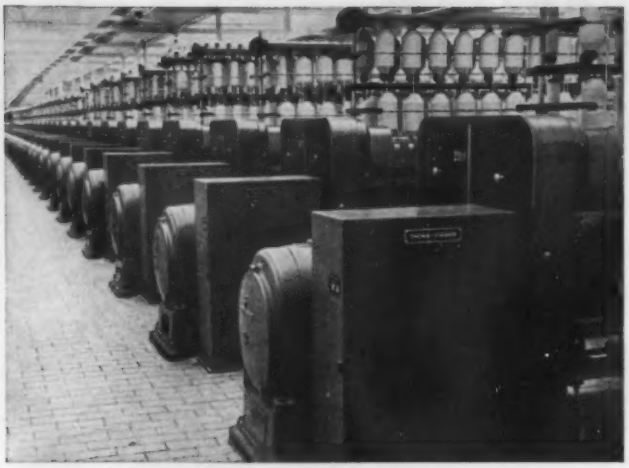

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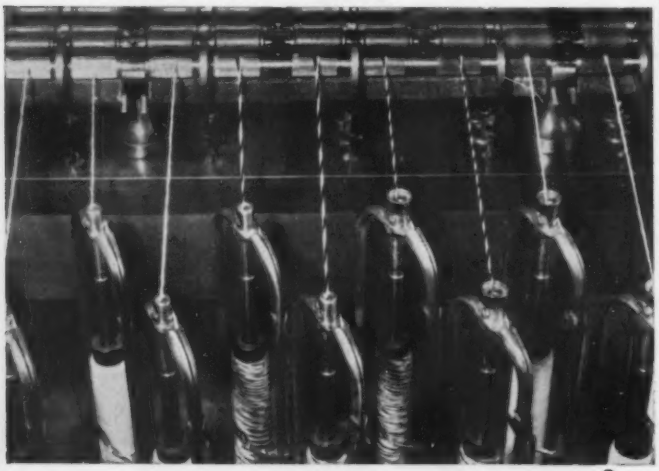

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| | | |
|---|---|---|
| Cocker Mach. & Fdry. Co. | 74 | R |
| Cole Mfg. Co., R. D. | 224 | B E |
| Colton Chemical Co. | 234 | C |
| Columbia-Southern Chem. Corp. | 58 | C |
| Continental Can Co., Shellmar-Betner Flexible Packaging Div. | 175 | P |
| Cook P & N Machine Co. | 192 | E |
| Corn Products Refining Co. | 225 | C |
| Crane Co. | 86 | H |
| Crompton & Knowles Loom Wks. | 13 | R |
| Crompton-Richmond Co., Inc. | 263 | N |
| Crown Engineering & Sales Co. | 272 | K |
| Crucible Steel Co. | 215 | O |
| Curlator Corp. | 37 | T |
| Dary Ring Traveler Co. | 230 | T |
| Dayton Rubber Co., The Textile Div. | 30-31 | RT |
| Deutscher, Spinnerimaschinenbau Ingolstadt | 21 | T |
| Diehl Mfg. Co. | 163 | F Q |
| Dobeckmun Co., The | 52 | G |
| Dodge Mfg. Corp. | 252 | Q |
| Dolge Co., C. B. | 228 | B |
| Draper Corporation | 1 | R |
| Dronsfield Bros. Ltd. | 269 | T |
| duPont de Nemours & Co., E. I Dyestuff Dept. | 81 | C |
| Electrochemical Dept. | 232 | C |
| Plastic Div. | 221-222 | O |
| Durant Mfg. Co. | 212 | K |
| Emerson Apparatus Co. | 228 | K |
| Emery Industries, Inc. | 201 | C |
| Eriez Mfg. Co. | 231 | T |
| Felters Co., The | 10 | L RT |
| Fidelity Mach. Co., Inc. | 78 | L T |
| Finnell System, Inc. | 46 | D |
| Foster Machine Co. | 70 | T |
| Foxboro Co., The | 227 | K |
| Franklin Process Co. | 36 | G |
| Gardner-Denver Co. | 83 | H |
| Gastonia Textile Sheet Metal Wks. | 283 | T |
| Gaylord Container Corp. | 161 | P |
| General Dyestuff Co. | 73 | C |
| General Tire & Rubber Co. Industrial Prods. Div. | 219 | L RT |
| Gessner Co., David | 285 | E |
| Globe Dye Works Co. | 202 | G |
| Goodrich Chemical Co., B. F. | 42 | C |
| Goodyear Tire & Rubber Co. | 9 | P |
| Gulf Oil Corp. | 28 | M |
| Harwood & Son, Geo. S. | 228 | T |
| Haskell-Dawes Mach. Co., Inc. | 226 | T |
| Hayssen Mfg. Co. | 8 | P |
| Heineman Corp., O., Div. of Aetna Industrial Corp. | 269 | G |
| Herbert Products Inc. | 262 | T |
| Hermas Machine Co. | 214 | E |
| Herr Mfg. Co. | 75 | T |
| Hinde & Dauch | 45 | P |
| Hunter Machine Co., James | 43 | E |
| Huyck & Sons, F. C. Noone Ind. Fabrics Div. | 264 | E |
| Hyatt Bearings Div., General Motors Corp. | 193 | O Q |
| Ideal Industries, Inc. | 237 | T |
| Industrial Brush Co., Inc. | 204 | E |
| Industrial Dryer Corp. | 261 | T |
| Industrial Rayon Corp. | 64-65 | G |
| Industrie-Werke-Karlsruhe | 273 | E |
| Ingersoll-Rand Co. | 25 | H |
| International Salt Co., Inc. | 181 | E |
| Ives Co., L. T. | 62 | L |
| Jacquard Knitting Mach. Co., Inc. | 80 | L |
| Jenkins Bros. | 51 | H |
| Jenkins Sons Inc., M. W. | 189 | E |
| Jiffy Textile Marker Co. | 268 | E L R |
| Johnson Corp., The | 272 | H |
| Keever Starch Co. | 176 | C |
| Kennett Equip. & Machry. Co. | 210 | P |
| Kidde Mfg. Co. | 53-56 | L R |
| Kuljian Corp., The | 272 | N |
| Lazenby Co., The F. A. | 228 | T |
| Leighton Machine Co. | 68 | L |
| Lewellen Mfg. Co. | 216 | Q |

| | | |
|---|---|---|
| Link-Belt Co. | 7 | Q |
| Loper Co., Ralph E. | 274 | N |
| Louden Machinery Co., The | 213 | D P |
| Main, Inc., Chas. T. | 268 | N |
| MAK Maschinenbau Kiel | 74 | T |
| Malina Co. | 254 | G |
| Manhattan Rubber Div. | 76 | Q |
| McBride, Edward J. | 6 | R |
| Metallizing Engineering Co., Inc. | 268 | O Q |
| Metlon Corp. | 69 | G |
| Micro Switch Div. | 251 | F |
| Milton Machine Wks., Inc. | 270 | R |
| Minneapolis-Honeywell Reg. Co. Industrial Div. | 48-49 | K |
| Micro Switch Div. | 251 | F |
| Moisture Register Co. | 256 | K |
| Monsanto Chemical Co. Inorganic Chem. Div. | 195 | C |
| Plastic Div. | 85 | C |
| Montgomery Co., The | 270 | G |
| Mortell Co., J. W. | 264 | B |
| Morton Salt Co. | 171 | C |
| Mount Hope Machinery Co. | 88 | E |
| National Aniline Div., Allied Chem. & Dye Corp. | 17 | C |
| National Starch Prods. Inc. | 203 | C |
| Naugatuck Chemical Div. U. S. Rubber Co. | 217 | C |
| New Departure Div. of General Motors Corp. | 11 | O Q |
| N. Y. & N. J. Lubricant Co. | 224 | M |
| Noone Industrial Fabrics Div. F. C. Huyck & Sons | 264 | E |
| Norgren Co., C. A | 197 | M |
| Oakite Products, Inc. | 273 | C |
| Onyx Oil & Chem. Co. | 87 | C |
| Ordnance Gauge Mach. Co. | 218 | L |
| Pabst Brewing Co. | 260 | C |
| Penick & Ford, Ltd., Inc. | 210 | C |
| Platt Bros. Sales Ltd. | 172 | T |
| Procter & Gamble | 257 | C |
| Proctor & Schwartz, Inc. | 84 | E T |
| Pure Oil Co. | 165 | M |
| Raybestos-Manhatten Inc., Manhatten Rubber Div. | 76 | Q |
| Reiner Inc., Robert | 50 | L |
| Rhoads & Sons, J. E. | 5 | R |
| Ridge Tool Co. | 200 | H |
| Riggs & Lombard Inc. | 233 | E |
| Robbins & Myers, Inc. | 235 | H |
| Robert & Co. Associates | 2nd Cover | N |
| Rohm & Haas Co. | 199 | C |
| Rome Soap Mfg. Co. | 275 | C |
| Roy & Son Co., B. S. | 258 | T |
| Ryerson & Son Inc., J. T. | 152 | O |
| Saco-Lowell Shops | 34, 156 | T |
| Sandoz Chem. Wks., Inc. | 27 | C |
| Schweiter Ltd. | 26 | T |
| Scott Testers, Inc. | 267 | K |
| Scott & Williams, Inc. | 20 | L |
| Servospeed Div. of Electro Devices Inc. | 206 | E K |
| Shell Oil Co. | 63 | M |
| Signode Steel Strapping Co. | 198 | P |
| Simco Co., The | 197 | E L R T |
| Sinclair Refining Co. | 229 | M |
| SKF Industries, Inc. | 245 | O Q |
| Socony-Vacuum Oil Co., Inc. | 24 | M |
| Sonoco Products Co. | 67 | E T |
| Southern States Equip. Corp. | 223 | Q |
| Southern Shuttles Div. Steel Heddle Mfg. Co. | 191 | R |
| Southern Textile Machine Co. | 18 | L |
| Speizman Co., Inc., Morris | 271 | L |
| Spinnbau G M B H | 286 | T |
| Standard Pressed Steel Co. | 274 | O |
| Stanley Works, The | 194 | K |
| Steel Heddle Mfg. Co. | 191 | R |
| Stellite American Corp. | 284 | T |
| Stephens-Adamson Mfg. Co. | 169 | O Q |
| Sterling TNA • 5 | 181 | E |
| Stop-Motion Devices Corp. | 259 | L |
| Stowe-Woodward, Inc. | 2 | E |
| Superior Combustion Industries, Inc. | 273 | Q |
| Supreme Knitting Mach. Co., Inc. | 59 | L |



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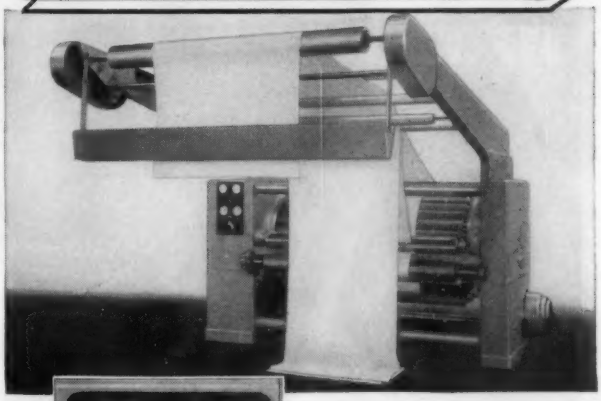
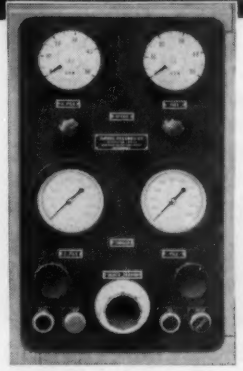
**PLUS smoothness, PLUS nap density**

*is hard to believe*





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| | | |
|---|---|---|
| Swift & Co., Industrial Soap Dept. | 167 | C |
| Sylvania Elec. Prods. Inc. | 253 | F |
| Talcott, Inc., James | 271 | N |
| Taylor Instrumennt Cos. | 247 | K |
| Tennant Co., G. H. | 220 | D |
| Texnovo S. P. A. | 266 | R |
| Textile Machine Works | 148 | L |
| Textile Trimming & Boarding Mach. Co. | 219 | E |
| Thoma Co. | 284 | T |
| Toledo Pipe Threading Mach. Co. | 238 | H |
| Tompkins Bros. Co. | 216 | L |
| Torrington Co., The (Needles) | 77 | L |
| Turbo Machine Co. | 90 | T |
| Unionmatex, Textilmaschinen-Union, G. M. B. H. | 19 | E RT |
| US Bobbin & Shuttle Co. | 259 | RT |
| U. S. Rubber Co., International Div. | 267 | G |
| Mechanical Goods Div. | 82 | Q |
| Naugatuck Chemical Div. | 217 | C |
| U. S. Textile Mach. Co. | 79 | T |
| Universal Winding Co. | 44 | T |
| Utica Novelty & Mill Specialty Co. | 270 | E L |
| Veeder-Root, Inc. | 4th Cover | K |
| Versenes Chemical Co., Inc. | 208 | C |
| Vickers, Inc. | 209 | E H O |
| Victor Ring Traveler Co. | 241 | T |
| WAK Industries | 274 | K |
| Warner & Swasey Co. | 71 | T |
| Wiesner-Rapp Co. | 205 | E |
| Whitin Machine Works | 32, 39 | T |
| Wildman Mfg. Co. | 66 | L |
| Winsor & Jerauld Mfg. Co., Inc. | 211 | E |
| Wolf & Co., Jacques | 255 | C |
| Wood's Sons Co., The | 29 | Q |
| Young Aniline Works, Inc. | 263 | C |

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PROFESSIONAL SERVICES

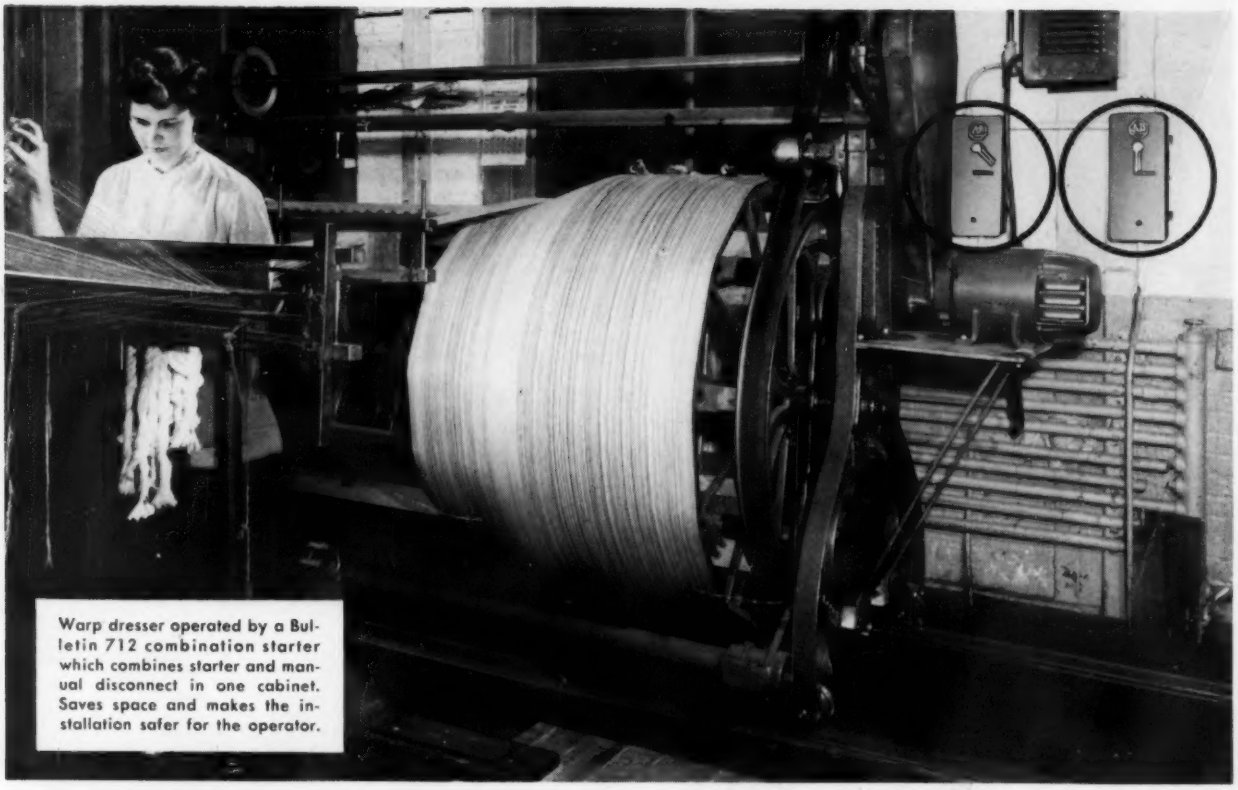

| | |
|---|---|
| Kuljian Corp | 272 |
| Loper & Co., R. E. | 274 |
| Main & Co., Charles T. | 268 |
| Robert & Co., Associates | Second Cover |


SEARCHLIGHT SECTION
(Classified Advertising)
H. E. Hilty, Mgr.


| | |
|---|---|
| EMPLOYMENT | |
| Positions Vacant | 275, 276, 280 |
| Selling Opportunities Offered | 275 |
| Positions Wanted | 275, 276 |
| Employment Services | 275 |
| SPECIAL SERVICES | |
| Contract Work | 276 |
| EDUCATIONAL | 276 |
| BUSINESS OPPORTUNITIES | 276 |
| NOTICES | |
| Auction | 277 |
| PROPERTY | |
| For Sale | 276 |
| For Rent | 276 |
| EQUIPMENT (Used or Surplus New) | |
| For Sale | 276-282 |
| WANTED | |
| Equipment | 282 |
| Miscellaneous | 276, 278, 279, 282 |


ADVERTISERS INDEX


| | |
|---|---|
| Bialek Co., Inc., Theodore | 282 |
| Blank Co., Inc., A. & M. | 282 |
| Blank, Moe | 280 |
| Bresani, Joseph | 279 |
| Carpenter Co., Inc., L. E. | 279 |
| Celanese Corp. of America | 280 |
| Chemical Service Corp. | 282 |
| Collins & Aikman Corp. | 281 |
| Doyle & Miller | 278 |
| Drying & Heating Equipment Co. | 282 |
| Egan Inc., George W. | 279 |
| Faym Products Manufacturing Corp. | 278 |
| Fitzgerald, James E. | 278 |
| Freeman & Co., Samuel T. | 277 |
| Gaines Textile Machinery Co. | 276 |
| Gladwin Plastics Inc. | 280 |
| Greenfield & Co., Albert M. | 276 |
| Industrial Products of America | 281 |
| IPA Southern Inc. | 281 |
| Jaswell & Son Inc., Peter | 280 |
| Jucy | 276 |
| Machinery Liquidating Co., Inc. | 278 |
| Machinery Sales Corp. | 282 |
| McDowell Assoc., Inc. | 279 |
| McKittrick Co., Frank G. W. | 278 |
| Miller Machinery Co. | 279 |
| New England Products Co. | 282 |
| Osterneck Corp. | 278 |
| Pennsylvania Spool & Equipment | 280 |
| Plymouth Cordage Co. | 278 |
| Rabinowitz & Sons, Wm. | 279 |
| Raymond Service Inc., Charles | 275 |
| Republic Textile Equipment Co. | 281 |
| Textile Auxiliaries | 282 |
| United States Rubber Co. | 280 |
| Wheeler Co., Frank W. | 276 |
| Whitehead Supply & Eng. Co. | 282 |
| Williams Machinery Co. | 281 |



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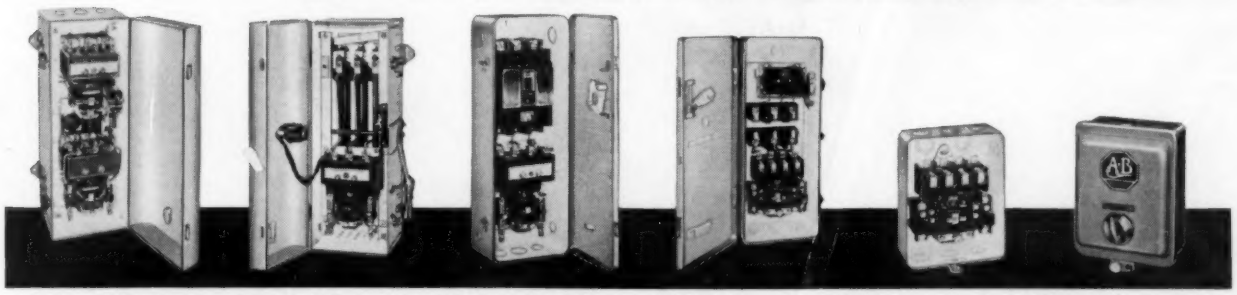

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